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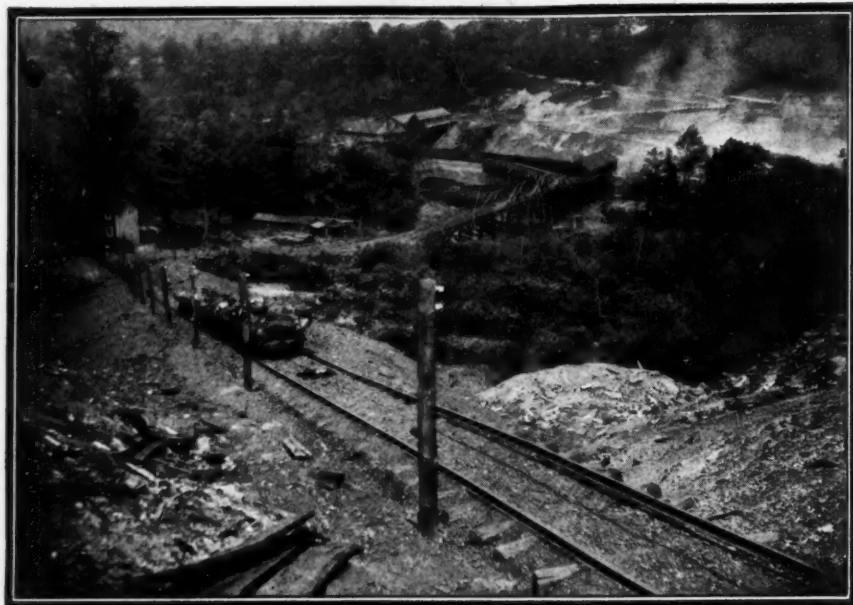
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Where Breakage Means Heavy Loss

It would probably be agreed by most coal men that of all large buyers the domestic consumer is the most exacting. Some household fuels are hard and tough and capable of withstanding much abuse and rough handling, whereas others possess exactly opposite characteristics and, figuratively, "must be handled with kid gloves." Unfortunately, some of the best coals, from the standpoint of heat content, are of this latter type. Thus Pocahontas, Georges Creek and New River fuels, although unusually high in B.t.u. are extremely friable, and if not handled carefully are subject to much degradation.

In next week's issue of *Coal Age*, George S. Jaxon will describe a modern preparation plant recently erected by the Pocahontas Corporation, that has been designed to prepare for sale in an exacting domestic market the friable coal of McDowell County, West Virginia, and Tazewell County, Virginia.

Unnecessary Degradation Avoided

Many ingenious devices have here been resorted to to prevent degradation. Thus, the pans of the picking tables are convex transversely on their upper sides so that the coal will readily slide off as the apron rounds the head sprocket. Degradation screens are also employed in order to assure complete removal of fines before the finished product is delivered to the railroad car. The problem dealt with is, of course, an old one but the means employed to effect its solution will be of interest to mining men everywhere.



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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

Volume 30

NEW YORK, NOVEMBER 11, 1926

Number 20

Farmers Will Use More Coal

THOSE WHO THINK that a large demand for coal must wait until the economical conversion of coal into benzol is an accomplished fact are overlooking a number of large possibilities. The farmer has always depended on the sun and rain to mature his crops and on the sun to cure them. It is probable that before long he will water his fields with the aid of pumps and cure his crops with artificial heat. The losses due to a wet harvest, especially in a year such as this, are too large to be overlooked. The farmer cannot afford to see his crops destroyed by unseasonable rains. It has been found that the palatability of artificially dried alfalfa hay is greater than that of the sun-dried article and that hay cured in the sun loses one-fourth of its protein and minerals in the curing process. The hay cured artificially has 10 to 20 per cent more nutritive value. All the leaves are saved, whereas about one-third of them are lost in sun drying, and these are the most nutritive portion of the plant.

The farmer also will use more heat in his home and will soon be unable to obtain that heat from cordwood, the supplies of which are becoming exhausted. He will use more electricity in the operation of his farm equipment and in the lighting of his home. Already many farmers, where no current is available, are generating their own, having equipped themselves with oil engines. Many others will purchase power as soon as the opportunity presents and will abandon the use of oil. The farmers may never be large coal users, directly or indirectly, but constituting so large a percentage of the population, they will in the aggregate greatly increase the present consumption.

Do We Need Other Glasses?

JUST AT THE PRESENT time the coal industry in general is, in the words of the popular song, "Looking at the World Through Rose-Colored Glasses." Due to the heavy demand for coal by Europe, occasioned by the strike of the British miners and by the seasonal increase in demand in our own country, many of our mines are operating at or near their full capacity. But perhaps even more significant is the fact that many mines that have been idle for months, and in some cases even for years, have resumed operation. All of which makes for prosperity both for the operators and the miners.

But when a decrease in demand necessitates curtailment of operation, what then? The companies that have pursued a progressive policy of modernization and research will be able to continue operation in the face of adverse business conditions. They will be able to do this because their improved methods of mining and preparation will permit of operation at some profit even when the market price of coal is low.

On the other hand, the companies that have failed

to keep their properties up to date and which in many cases operate only when there is a great demand for coal will be forced to shut down. Such companies, and unfortunately they are many, need a new perspective and should substitute the glasses of progressiveness for those of "let well enough alone."

Record Production

PRODUCTION FIGURES on bituminous coal for the remaining weeks of 1926 will be watched with more than ordinary interest by those who are seeking to fix the place of an extraordinary year in coal trade history. That the year now drawing to a close will rank with 1920 and 1923 in total tonnage no longer seems doubtful. Certainly it would take an unusual slump to put the total far below the figures for those years. On the other hand, it is not impossible that the output may challenge the record made in 1918 when production was 579,385,820 tons.

The most gratifying thing about the output is that the major gains must be credited to industrial expansion. Earlier in the year, it is true, the bituminous industry was called upon to take care of the shortage created by the anthracite strike, but this contribution did not exceed 10,000,000 tons and probably was less. Since the tie-up in British mining, the United States has shipped considerably more than its normal tonnage to overseas destinations. Nevertheless, even the most liberal estimates of the quantity so moving cannot disguise the fact that a healthy growth in home consumption has been the foundation of the sustained demand for bituminous coal.

Export trade has exercised a controlling influence upon bituminous spot prices in the past four months. And the influence has not been a healthy one. Prices in recent weeks have been raised to levels which have encouraged the re-opening of uneconomic mines and this re-opening has brought on an inevitable dilution of labor and transportation. Moreover, the prices bid by procrastinating consumers give the public a false conception of profits as damaging to the future of the industry as the levels a few weeks back were to the present financial stability of the mines. They are unsoundly based because they bear no real relation to production costs.

What the industry needs is not extravagant profits over short periods but a fair rate of return on the capital employed and the service rendered over a long period of time. This repeated Lazarus-Dives metamorphosis cannot be other than disastrous. The sooner, therefore, artificial bases for price increases disappear the better it will be for the industry. Normal, steady expansion in consumer demand probably offers the greatest hope of real, abiding prosperity. For that reason, 1926 production, when disassociated from the incidents of the anthracite and the British strikes, is justification for optimism for the future.

No Secrets Left

TO TELL THE TRUTH there never were any secrets in coal mining, but, as a rule, certain things were rarely admitted in public. For instance, the manager of a class 3 coal mine (recent classification of U. S. Bureau of Mines) might tell his friend that the mine was very gassy, but at a meeting would only admit that "some gas" had been detected.

A marked change of attitude is now apparent. Officials unhesitatingly tell that a certain mine is gassy and point with pride to the many precautions that are taken to insure safety. They know that the more intelligent miners prefer a gassy mine where safety is given first consideration to the slightly- or moderately-gassy operation that is loosely managed.

The change of attitude shows a general confidence in improved equipment and methods for ventilation, in permissible explosives, in government-approved electrical equipment, and in the last line of defense—rock dust. Now that some of the "mysteries" have been explained, and that difficult conditions are freely admitted, there is hope for still greater strides in the industry because of the complete interchange of experience and thought.

Rapid Progress in Mine Hauling

IS THE PERSONNEL of the American coal mines slow to learn? Only a few years ago, mine haulage was notable chiefly for its poorly laid track of light steel over which traffic moved at a snail's pace. Derailments were common—so common in fact, that they were expected. More recently, however, mine managers and engineers have become apt scholars and have taken unto themselves many lessons from the railroads. Consequently, a decided improvement in mine transportation is noticeable.

A few years ago rails heavier than 40 lb. to the yard were a curiosity in coal mines. Today the smaller operations are discarding rails lighter than this for use on their main hauls and the larger mines as a rule are equipping their primary haulage roads with rails of 70 lb. or more. At its Derby mine, in Virginia, the Stonega Coke & Coal Co. has laid its outside track, as well as much of that within the mine, with 85-lb. rails. A short distance away, at the Calvin mine of the Blackwood Coal & Coke Co., even room tracks are laid with 45-lb. steel. This appears to be somewhat in advance of present-day practice, for the current trend is to replace the use of 15- to 20-lb. rails in rooms, with steel weighing 25 to 30 lb. or in some cases 35 lb. per yd.

Only a few years back a 3-ton mine car was considered a "whopper." Such a car today is quite common and is even coming to be considered comparatively small. It is being replaced by cars holding 5 tons or more. Some such cars capable of holding 10 tons are now in service and the limit has by no means been reached as yet. Some prominent coal operators are steadfast in their belief that a double-truck car is entirely feasible. Their ideas on this subject, somewhat slangily expressed, would be approximately as follows: "When we get the articulated truck we'll take a car of the size used on European railroads directly into our mines. Then, just watch those mechanical loaders and conveyors do their stuff!"

A remarkable transition in the choice of locomotives

for haulage service may also be observed. The 8- and 10-ton machines are now giving way to 15-ton traction units where big output is required. As a rule, such machines are operated singly, but in some instances in pairs, making really a single articulated unit. Twenty-ton single units are by no means rare and some companies have machines of this type in service that weigh 30 tons or more.

Haulage equipment, in order to be effective, must be so designed that its speed is really no greater than its ability to retard or stop a trip. Dynamic braking is the agency generally accepted as being most suitable for retardation.

Soon, no doubt, many mines will be provided with elaborate telephone systems, signals of various kinds, automatic switches and electrically illuminated switch targets to govern and control fast-moving trips in well-lighted entries. Some big operations, notably Valier, are already blazing the way. In this mine dispatching and haulage has been so simplified that two locomotives handle the entire output, sometimes amounting to 6,500 tons in an 8-hr. day, over a distance of approximately one mile.

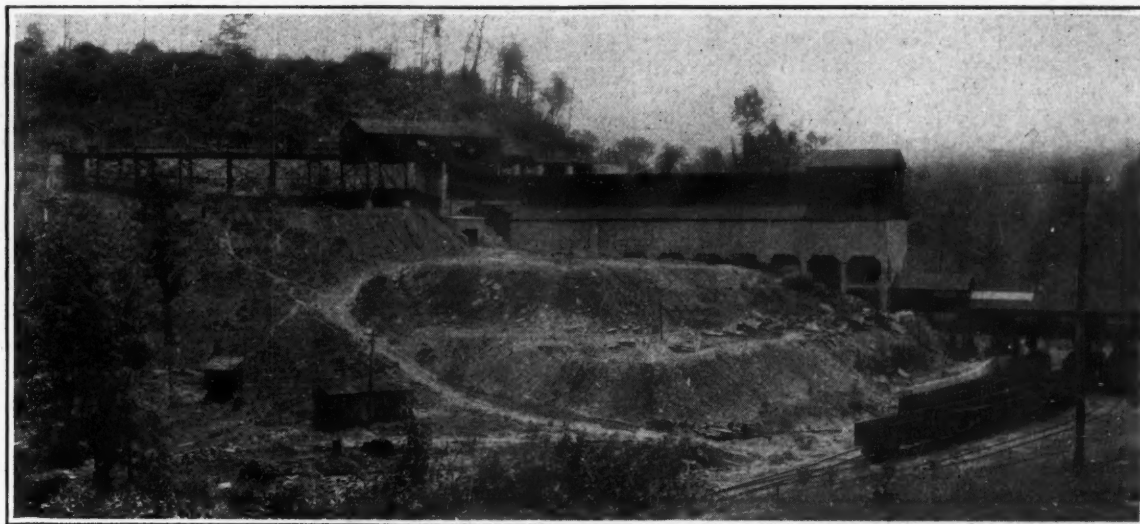
Nor is safety being neglected in the planning of new mines or the rejuvenation of old ones. Main haulage entries are being driven wide enough to provide ample clearance between track and rib. Steel and concrete arches, pilasters, beams and the like are being extensively employed. These materials not only impart the necessary support to the roof but will allow ample width for men, cars and the ventilating current. In at least one mine—Nemacolin—one of the tracks constituting a part of each important crossing also is bridged so that traffic in two directions at right angles moves freely and safely.

New Machines and Processes

FROM TIME TO TIME machinery is perfected and processes are developed for which extravagant, and often absurd, advantages are claimed. Perhaps in no field are such claims more frequently put forward than in the coal industry. Underground and surface equipment alike each year come in for their share of "revolutionary" improvement or development. In recent years, however, it is generally in preparation machinery that the greatest efforts toward improvement, either real or fancied, have been centered.

In considering a new machine or process and in studying the advantages claimed therefor, it is well to bear in mind two important and irrefutable facts: First, that no machine or process is, or ever will be, a panacea for all of the ills of the coal industry. This is due primarily to the varying conditions, such as differences in specific gravity, nature, etc., of the coal produced in various parts of the same or different fields. Second, that while all machines and processes are automatic to varying degrees, their ultimate operating efficiency can be no greater than that of the man, or group of men, held responsible for their operation, maintenance and upkeep.

"All is not gold that glitters." By the same token, all of the improvements and advances that are claimed in the mechanical technique of the coal industry do not invariably mean an increase in production or in profits, or an improvement in the quality of the final product going to market.



Long Haul Proves More Economical Than Monitors

Tramroad Down Mountain Avoids Intermediate Transportation—Ballasted Roadbed and Heavy Equipment Employed—Big Bin Provides Ample Storage at Tipple—Unusually Heavy Rails Used in Room Track Assure Rigidity

By Alphonse F. Brosky

Assistant Editor, *Coal Age*, Pittsburgh, Pa.

IN OPENING UP a tract of coal, if the bed worked lies several hundred feet above railroad grade, the problem of finding the best means of transporting the output from the higher to the lower level is frequently found to furnish more than ordinary difficulties, yet in its correct solution the future prosperity of operations largely depends. Some engineers favor an intermediate medium of transportation as, for example,

The headpiece accompanying this article shows the tipple of the Calvin mine. This building is about 2½ miles from the mine openings. In the headhouse of this structure is a single-car rotary dump, and between it and the tipple proper is a 2500-ton concrete and steel storage bin, which is divided into eight compartments. The tipple has a capacity of 500 tons per hour.

a retarding conveyor or a monitor plane; others prefer direct means such as a long mine-car haul on a fairly stiff grade extending from the mine opening to the tipple. This problem confronted the Blackwood Coal & Coke Co. in the development of its new Calvin mine in Lee County, southeastern Virginia.

In this specific case the coal measure under consideration is the Creveling bed, which outcrops high up on a hill. The management decided finally that for its particular purpose a long mine-car haul was preferable to a monitor plane. Aside from this, the topographical relation between the logical location for the mine openings and the most suitable site for the tipple

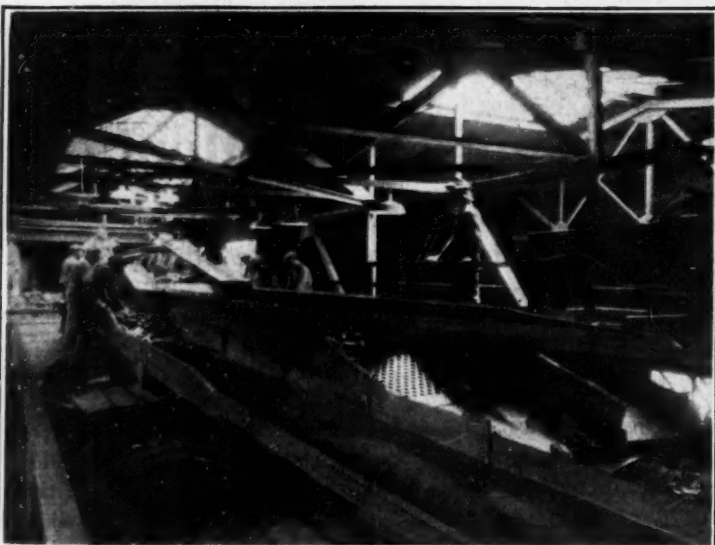
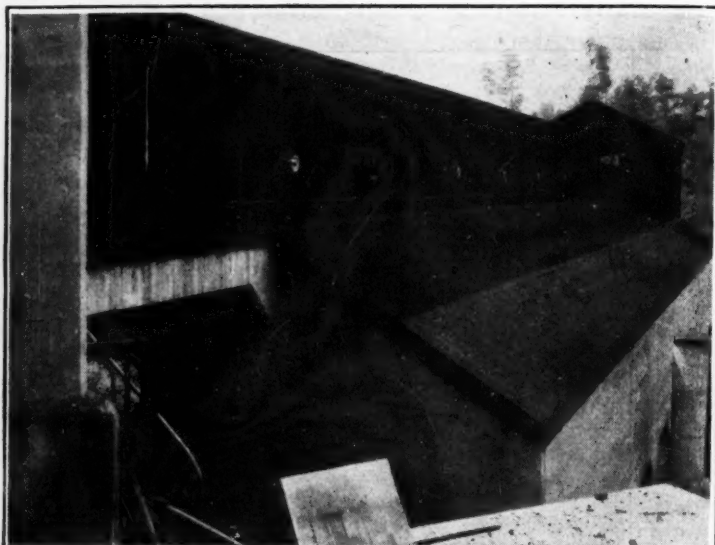
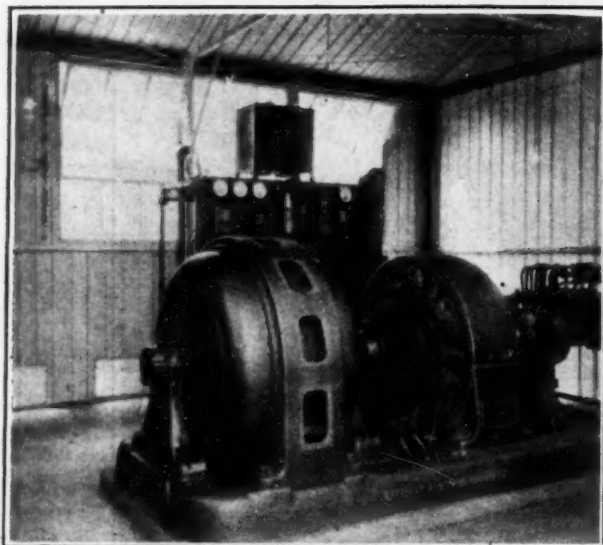


Figs. 1 and 2—A Stretch of Tramroad and the Locomotive that Traverses It.

With but slight variation, the track is on a grade of 3 per cent from mine openings to tipple, or a distance of about 2½ miles. The 60-lb. rails are laid on creosoted

ties, and crushed sandstone is used for ballast. The locomotive weighs 15 tons. Its control is magnetic but the brakes are manually applied. This machine can haul

about 30 empties per trip to the tipples but can retard as many as 50 loaded cars coming down. The steel cab protects the motorman from weather and accident.



Figs. 3, 4, 5 and 6—Various Views in and about the Plant

Fig. 3, (upper left) shows the present substation equipment. As the mine is now producing less than 1,000 tons per day, this motor-generator set can meet its present electrical needs. A larger unit will be installed at the mine later. Fig. 4 (upper right) shows the feeder conveyor

was such that the choice fell to the long mine-car haul as the transportation link between the two.

The distance from the mine openings, two in number, to the tippie is about 2½ miles, and the difference in elevation between these points is approximately 350 ft. The tramroad, which consists of a single track, is consequently on a grade of 3 per cent along practically the entire distance. A typical portion of this tramroad is shown in Fig. 1. Its construction involved long cuts and, at a number of points, much filling was required. This work naturally involved the movement of many thousands of cubic yards of ground material consisting of clays, shales and a good deal of sandstone. Excavating, of course, was done by a steam shovel which worked its way up from the tippie site to the mine openings. Upon reaching the upper end of its journey the shovel was turned about and made to build its own road down through a hollow to the valley below, where it was used in further construction work.

A magnetically controlled, but hand-braked locomotive of 15 tons weight is used in the outside haulage service. The front end of this machine, as shown in Fig. 2, is totally inclosed by a cab constructed of steel and

over the storage bin. As the coal is unusually hard, it can be dropped into the bin without serious damage. Fig. 5 (lower left) is a view of the screening and picking floor. The reciprocating screen, here installed, is capable of handling 500 tons per hour. Fig. 6 (lower right) shows the

air line for cleaning the electrical equipment. In this picture the upper pipe line carries air under pressure. At convenient points along its length valves have been installed to which hose can be readily attached for blowing dust off of the electrical equipment.

glass. This is necessary in order to shelter the motor-man during inclement weather and to afford him some degree of safety in case of a derailment. The mine cars are of the box type, of composite construction, with a capacity of about 4 tons each. Trips of 30 to 50 of these cars are hauled from the outside parting at the mines to the tippie by this locomotive. On the return journey, however, only about 30 empty cars are handled. Braking effect, going down in addition to that afforded by the locomotive, is furnished not by brakes on the mine cars but by rail-and-wheel skids.

In several respects this tramroad resembles the line of an interurban railway system. The track is constructed of rails weighing 60 lb. per yard, laid on 4x8-in. sawn oak ties spaced on approximately 15-in. centers. These ties are creosoted, and because they are thus treated, tie plates are used. This track is being ballasted with crushed sandstone, of which a plentiful supply was furnished by the excavating job. The trolley wire is carefully aligned with respect to the inside rail of the track and is strung from iron-pipe brackets carried on heavy poles. This wire is about 10 ft. above the track.

A further similarity to an interurban railway system is seen in the fact that the generator equipment (see Fig. 3) which now furnishes power for the entire plant will, in the future, serve as an accessory to a larger substation unit which is to be installed nearer the mine. The present motor-generator will be so tied in with the trolley circuit of the tramroad as to assume the loads occasioned by the tram locomotive and with the proposed substation unit as to float on the line. Thus, the distribution of power to the outside haulage circuit normally will be independent of the underground transmission system. However, the smaller substation will assume a portion of any overload on the underground transmission. The control features of this layout will be automatic.

Trips are fed to a single-car rotary dump by a plunger feeder or ram. This is operated by compressed air as is the dump itself. Automatic car-stops are installed outside the dump while within it retaining horns are placed. These also are automatic in their operation and engage the wheels of the mine car. They operate in unison with the feeder ram which is controlled by a valve lever. As a result of this arrangement the feeding and spotting of the cars are semi-automatic, and the



Fig. 7—The Coal-Sampling Floor

Each car of egg and mixed nut and slack is sampled and analyzed for ash. A large representative sample is reduced to 6 oz. This is then burned to ash in an electric muffle furnace. This test is made at the mine before the car is shipped. The two crushers are of the rotary type and reduce the large sample to $\frac{1}{4}$ in. and smaller.

dumping equipment handles a trip at the rate of three cars per minute.

From a receiving hopper under the dump, the coal is discharged into a 4-ft. drag conveyor which travels over eight compartments in a 2,500-ton concrete bin, as indicated in Fig. 4. These compartments are individually filled through a gate opening, which, when closed, forms a part of the conveyor floor or pan. From any of the eight compartments the coal may be discharged through a counter-weighted gate to a 4-ft. apron conveyor. Each of these gates is manually operated through a chain block and rack and pinion. The apron conveyor transports the coal to a Marcus screen where block, egg, nut and slack or any combination of these sizes are prepared. Loading booms, of course, are utilized for lowering block and egg coal into the railroad cars. Fig. 5 is a view of the screening and picking floor.

This tipple has a capacity of 500 tons per hour. Being constructed almost entirely of concrete and steel, it is practically fireproof. As the mine is now producing much less than half its normal capacity, the tipple



Fig. 8—Creosoting Plant

At this plant all mine ties are treated and all timbers exposed to the weather in permanent outside structures. Each of the two dipping tanks is 3 ft. wide, 4 ft. deep and 13 ft. long. Heat is supplied to the preservative by a portable boiler.

is operated every second or third day only; this procedure being possible because of the bin. This storage structure was incorporated in the general design in order to assure a reasonably uniform tipple operation during normal times, and as an emergency provision against car shortages and the like. As the coal produced at this mine is unusually hard, the bin does not cause excessive degradation.

An uncommon feature of this tipple is an air line by which all electrical portions of the equipment are cleaned. This line is so located as to be within easy reach of the electrical equipment by means of a hose attached to convenient placed valves. As often as any be necessary, the motors, switches, contactors, etc., are thoroughly blown off by compressed air to rid them of coal dust. This provision will go a long way toward eliminating delays arising from electrical breakdowns.

Inasmuch as a large proportion of this coal is sold under guarantee, all cars of egg, as well as of nut and slack mixed, are sampled and analyzed for ash content before being shipped from the Calvin mine. The sampling floor is located under the tipple and is arranged as shown in Fig. 7. From each car of egg a 200-lb. sample and from each car of nut and slack a 250-lb. sample is taken. The coal constituting this gross sample is secured from 12 separate points distributed over the top of the car and from a depth of 18 in. below the surface of the coal as loaded. The sampling points



Fig. 9—Clubhouse at Calvin

Few mining communities in the country can boast of better accommodations than this clubhouse affords. It contains eighteen sleeping rooms and is well appointed in every way. The weatherboards, as indicated by the dark surfaces, are creosoted.

are so selected that the gross sample constitutes a true representation of the contents of the car. These twelve constituent samples from each car are merged into one which is passed through one of two rotary crushers and reduced to a size of $\frac{1}{4}$ in. It is then quartered down to 3 lb. This is taken to the field laboratory near the tippie where it is again crushed to 100 mesh and further reduced to 6 oz. This final sample is then burned in an electric muffle furnace and the ash content determined. Besides giving a check on the ash content of each car, this procedure enables the management to control the loading of a uniformly clean coal.

Practically all the timber and lumber used in construction of a permanent nature is treated with creosote, as are also the mine ties. The treating plant is shown in Fig. 8. The process consists simply of immersing the wood in a hot bath of preservative for from $\frac{1}{2}$ to 4 hr. The dipping tanks, two in number, are each 3 ft. wide, 4 ft. deep and 18 ft. long. They are heated by steam which is generated in a small portable boiler. Track ties are dipped for one hour; all larger timbers, such as those intended for square sets, are treated for 4 hours. The weather boards used in the construction of dwellings, store, hospital and clubhouse (see Figs. 9 and 10) were thus treated with creosote.

The Calvin mine is working the Creveling bed, which averages about $8\frac{1}{2}$ ft. in thickness. This measure is divided into two benches by a 4-in. shale parting which occurs about 30 in. above the bottom. Places are center cut directly above the shale parting to a depth of 7 ft., by turret machines. The top bench is loaded out first, after which the parting is lifted and gobbed, and then finally the bottom bench is mined. How satisfactorily this method functions is well indicated in Fig. 11.

Crosscuts connecting intake and return airways are being driven at intervals of 300 ft. The advancing faces of these entries are ventilated by 12-in. tubing attached to 5-hp. centrifugal blowers. These machines are provided with two outlets so that two tubes can be attached to each. By this arrangement one blower will ventilate a pair of entries.

The Calvin mine is as yet in an early stage of development, few rooms have been turned and, consequently, little can be said of its underground practices. It is believed that this operation is the only coal producer in the world using 45-lb. rails in the construction of room track. These rails are laid on steel ties and, as might be expected, provide a track of such rigidity that derail-

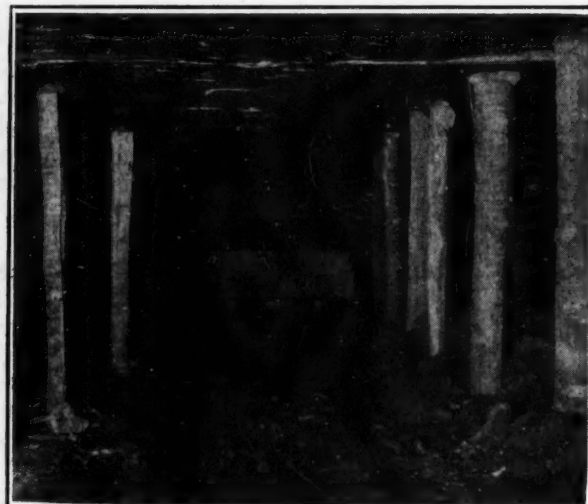
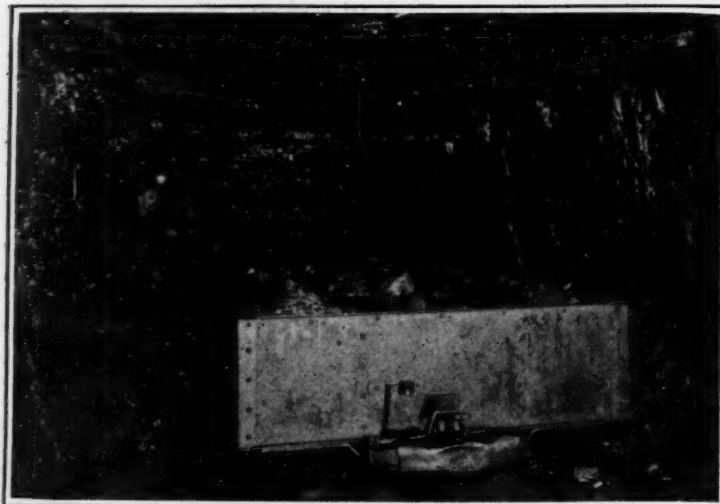
ments, either of cars or cutting machines, rarely occur. Fig. 12 shows a track of this kind.

Some coal men may argue against this practice, alleging that the use of 45-lb. rails in room and pillar work adds an appreciable increment to the capital investment from which no definite return is realized. The heavy rail is much more difficult to handle and lay, including the jobs of bending and straightening, than is, for instance, 30-lb. steel. When such a rail is buried by a fall a considerably greater monetary loss is suffered than when a lighter one meets a similar fate. The Blackwood Coal & Coke Co., however, subordinates all of these claims as being of secondary importance compared to the extremely tangible benefit derived from heavy room track, namely, the elimination of derailments. Furthermore the turret type cutting machines operate much more satisfactorily on the heavier rails. Another consideration favoring the use of heavy track in this mine is the fact that rooms are 400 ft. long. In such rooms the track must be well maintained.



Fig. 10—One of the Miners' Dwellings

The very appearance of this house bespeaks the soundness of its construction. It contains five rooms and is provided with running water. The building on top of the hill is the hospital. It is completely equipped for industrial surgical operations.



Figs. 11 and 12—Narrow Working Place and the Heavy Room Track

The bed is divided into two benches, the upper one of which is worked first. Coal from this bench can be easily shoveled into

the car. A M. Flonary, the loader here shown, advanced this entry 800 ft. in six months. In this mine derailments of cars

or cutting machines are extremely rare because of the heavy, rigid tracks used. They are 45-lb. rails laid on steel ties.

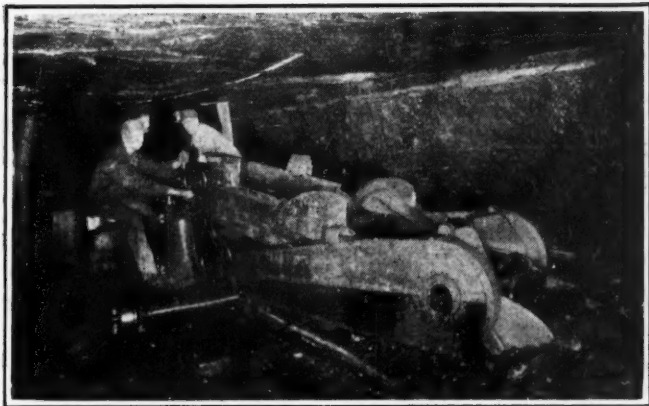


Fig. 13—Machine-Loading in a Room

It has been more than a year since this machine was first installed, and during this time it has been out of service as a result of breakdowns, a total of not more than three shifts. During the last six months, it has been averaging about 175 tons per shift.

One loading machine, of the shovel type, shown in Fig. 13, has been in continuous operation in this mine for over a year. It is being employed exclusively for the loading of room coal during the night shift. For a period of two months immediately after it was installed this machine was double shifted. It was used day and night for several weeks in the removal of loose ground from a cave-in at the entrance to one of the mine openings. Throughout this entire period, during which it has handled many thousands of tons of material, this machine has been out of service as a result of breakdowns less than three shifts. Repair costs thus far have been negligible although the coal is hard.

New Rating for Electric Motors

It is reported in *Power* that at the recent meeting of the Association of Edison Illuminating Companies, held in Quebec City, L. L. Elden presented a paper on "Motor Ratings and Their Applications Under Present Standards." The earlier method of rating motors was to allow a 40-deg. C. temperature rise above an ambient temperature of 40 deg. and a 25-per cent overload rating for two hours. Then the 50-deg. C. rise rating came into use. This was followed with a rating based on a 40-deg. rise with no overload specified. The new rating is based on a 40-deg. rise, but allows the use of a service factor to increase the capacity of the motor under suitable conditions. According to the Electric Power Club Rules, "When authorized by the manufacturer, a service factor of 1.15 may be applied to 40-deg. open-type general-purpose motors larger than fractional horsepower sizes, when operated at rated voltage and frequency."

Among the favorable results expected to be attained through the use of the service factor to supplement present ratings are:

1. Manufacturers can concentrate on a single product. Assurances have been given that under these conditions the future cost of 40-deg. motors will be favorably affected.

2. The user can safely purchase motors more nearly corresponding to his actual requirements, thereby effecting a saving in the initial investment. For example, it will no longer be necessary to purchase a 15-hp. motor when only 12-hp. capacity is required. Assuming that service conditions are favorable, a 10-hp. motor utilizing

The output of this machine is gradually being increased. During the last six months it has produced an average of about 175 tons per 10-hr. shift while loading in rooms. This does not include the coal that is loaded by hand in cleaning up a place after the machine has left it. Three of the 10 men comprising the machine crew scrape bottom and load out whatever loose coal is left by the cutting machine. Including the coal that is loaded by hand the output of the crew is about 200 tons per shift of 10 hr. or an average of about 16 tons per man per shift on an 8-hr. basis. These output figures are not phenomenally high, but they have been constant over a long period.

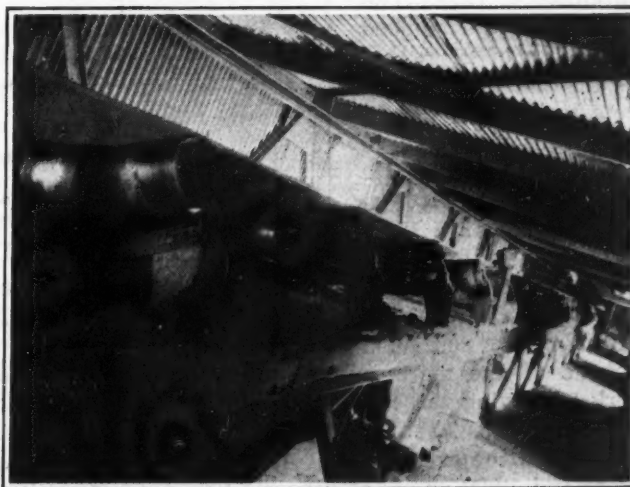
TEN MEN COMPRISE LOADING-MACHINE CREW

Two men of the loading machine crew are cutting-machine operators who devote only half their time to the loader. Their services are consequently equivalent to that of only one man on a full-time basis. In addition to them and the three clean-up men, who, incidentally, also lay track and set timbers, the crew includes one shovelman, one shotfirer, one shotfirer's helper, a motorman and a trip rider.

The loading machine is constantly attended by a gathering locomotive which handles a trip of five to six cars. This number, of course, is steadily reduced as one after another of the cars is loaded and placed on the entry. Rooms are 20 ft. wide and are driven to a depth of 400 ft. The room props furthest in by are maintained no nearer than 25 ft. from the face. The machine is actually engaged in loading less than half the time available in each shift. By reducing this idle time output may be increased.

the "service factor" would be of adequate capacity for the desired service.

The net results of the purchase of the smaller motor would include a saving in the first cost of machine and starter, or controller, if used; a possible reduction in cost of wiring, a saving in operating costs due to better efficiency of the motor under higher loading conditions, and in some cases avoidance of power-factor penalties now included in many companies' rate schedules.



Belt Conveyor to Rescreeener on a 21-Deg. Slope

This conveyor carries 2-in. screenings from the main New Orient tippie to the rescreeener. In general practice the maximum slope of a belt conveyor is placed at about 18 deg. This belt is functioning successfully on a greater slope because the material it carries is a mixture of small sizes. The shape of the coal also does not favor rolling.

Construction at Nemacolin Is Made Permanent*

Two Shafts and One Slope Sunk—Carhaul and Rotary Dump Installed—All Mine Entries on Bottom Lined—All Concrete Mixed and Placed Mechanically—Little Interference with Regular Operation of Mine

By A. W. Hesse

Mining Engineer, Buckeye Coal Co., Nemacolin, Pa.

AMERICAN CONSTRUCTION practice trends strongly toward permanence and longevity. This is notably the case among the more recent coal plant installations. Also, it will be noted that the policy of many coal operators has changed from that of obtaining the desired tonnage from several plants of small capacities to that of a single installation capable of producing the whole amount. The Nemacolin Mine of the Buckeye Coal Co., a subsidiary of the Youngstown Sheet & Tube Co. was planned with both the above considerations dominant in the minds of its officials.

The mine openings and plant are located on the Greene County side of the Monongahela River, 73 miles south of Pittsburgh. Both its general location and the fact that the property is crossed by the Lambert Syncline, account for the selection of the exact site. One other potent factor was the possibility of rail and river shipments.

Two shafts and a slope of 19-deg. pitch were sunk to the coal. Work was started on all three in the second half of 1917. The air shaft was sunk to a depth of 243 ft. and completed in February, 1918. The slope was completed in November of 1918. The skip shaft was stopped at a depth of 21 ft. below the coal, and the concrete lining was put in to a height of 8 ft. above the coal in August, 1918. Work on this shaft was resumed in May, 1923, when it was extended to a depth of 60 ft. below the coal by September of the same year. It was not until May, 1924, however, that the lining was poured.

Some of the more important data relating to the work of driving these various openings are as follows: The air shaft is 20 ft. in diameter and 251 ft. 8 in. deep. It required the excavation of 4,788 cu.yd. of earth material and 1,902 cu.yd. of concrete was used in its lining. The maximum influx of water encountered

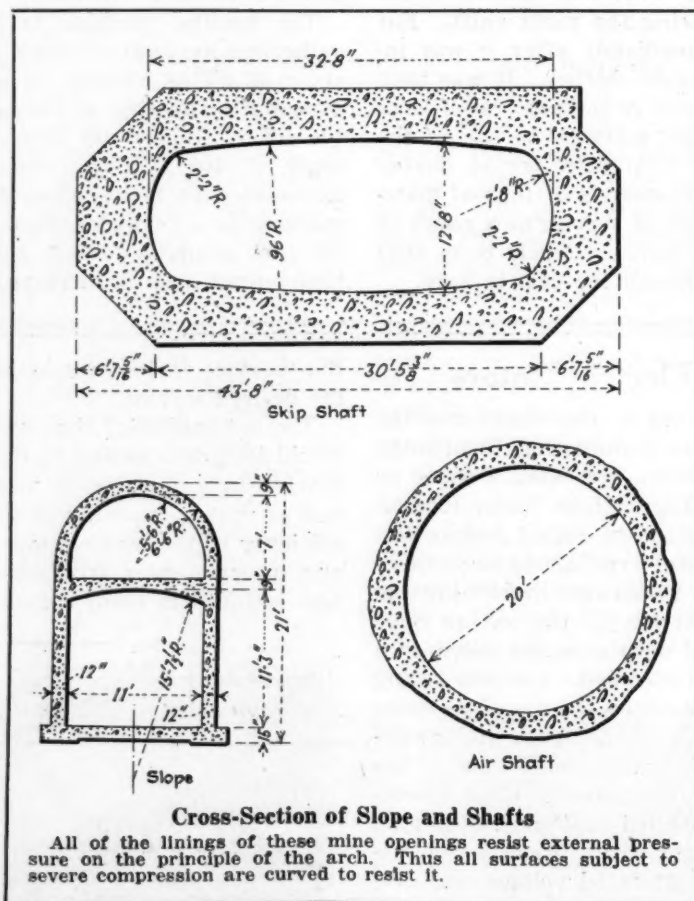
amounted to 475 gal. per minute, but after grouting this was reduced to 2 gal. per minute.

The slope is 11x19 ft. 1 in. in cross-section and 857 ft. long. The yardage of earth and rock handled in driving this passage amounted to 11,590 and the concrete used amounted to 5,200 cu.yd. The greatest inflow of water was 50 gal. per minute, later reduced to 2 gal.

In driving the skip shaft, which is 32 ft. 8 in. x 12 ft. 8-in. in cross-section, 6,042 cu.yd. of rock was excavated and 2,293 cu.yd. of concrete was poured in the lining. The maximum influx of water encountered amounted to 300 gal. per minute which, after grouting, was cut down to 3 gal. per minute.

One particular feature of the slope is the fact that it has two compartments. The men may walk the steps in the upper compartment while the rolling stock travels the lower compartment. Sections of these various openings are shown in one of the accompanying illustrations.

Coal was first hoisted from the air shaft on May 7, 1918. Entry driving was continued but the coal had to be stored, as the railroad extension from Crucible to Nemacolin had not then been completed. As soon as the slope was driven to the coal and the lining finished, the entries were driven along projected lines to connect with those advancing from the air and skip shafts. As soon as the underground connections

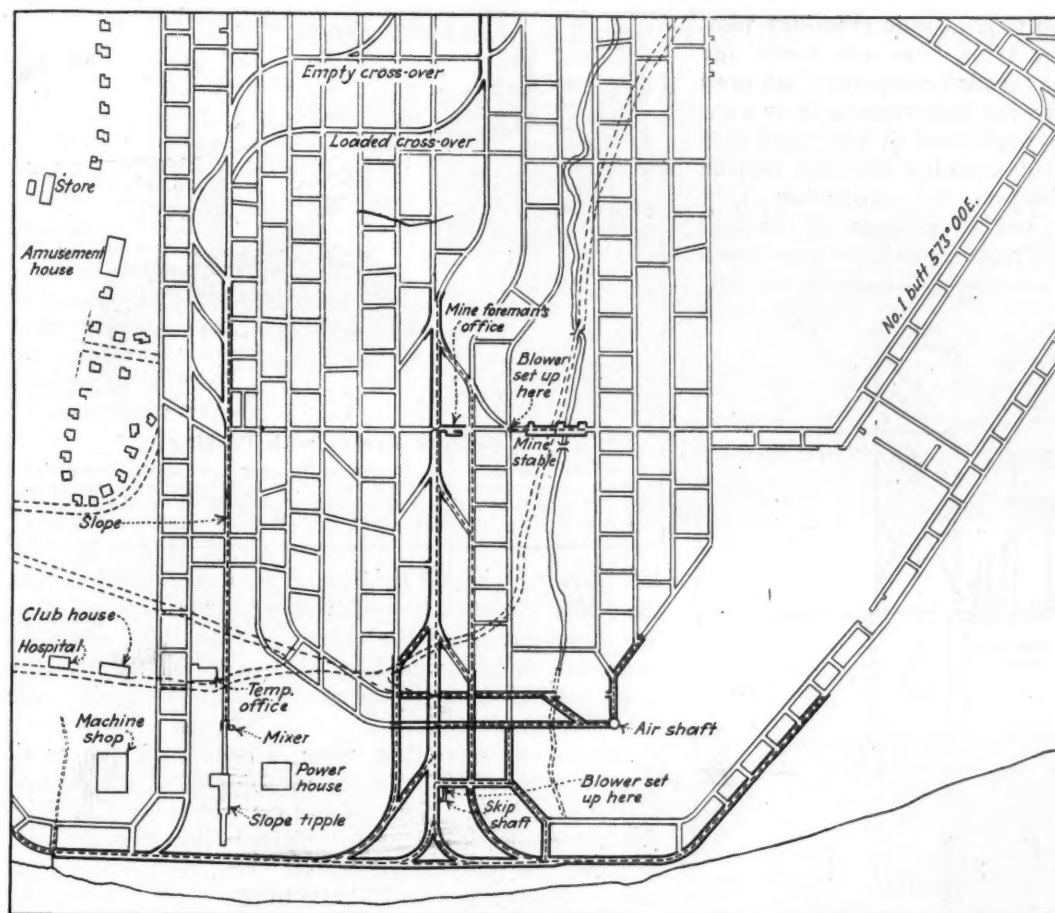


had been made between these two openings hoisting by bucket was inaugurated at the skip shaft and construction on the fan at the air shaft was started.

It became evident from the moment entry driving started that all wide spaces would have to be substantially supported in order to avoid future roof troubles. Experience in neighboring mines presented the probability of not only roof caves but the sloughing of sides above the coal bed. This was anticipated at Nemacolin and plans were immediately made for a double-track slope bottom protected by concrete side walls and a brick arch.

In order to avoid congestion around the bottom dur-

*Abstract of paper entitled "The Coal Mining Plant of the Buckeye Coal Co., Nemacolin, Pa.—Résumé of Construction Work," presented before the meeting of the American Institute of Mining and Metallurgical Engineers, Pittsburgh, Pa., Oct. 5 to 9, 1926.



Bottom Layout

This shows both the underground and surface layout in the vicinity of the slope and shafts. It also shows the position of the concrete "blower" as employed in the construction of the underground stable. Many of the mine passages here shown are protected by means of concrete arches or by brick arches set on top of concrete side walls. None of the concrete used was mixed or put in the forms by hand, all of it being made and placed by mechanical means.

ing construction operations, the concrete mixer was placed at the headhouse, batches mixed outside, dropped into a 6-in. pipe and blown into the forms at the bottom by compressed air. The excavation was made in short sections and immediately cleaned out to avoid delaying the transportation of coal. The forms were so constructed that cars could pass by or under them. Thus, no delays to the movement of coal were experienced at any time. The construction started Mar. 16, 1919, and was completed Sept. 16, of the same year requiring only 5 months. The material handled amounted to: Excavation, 5,125 cu.yd., concrete, 838.27 cu.yd. and brick, 260,153.

After the success in blowing concrete through a 6-in.

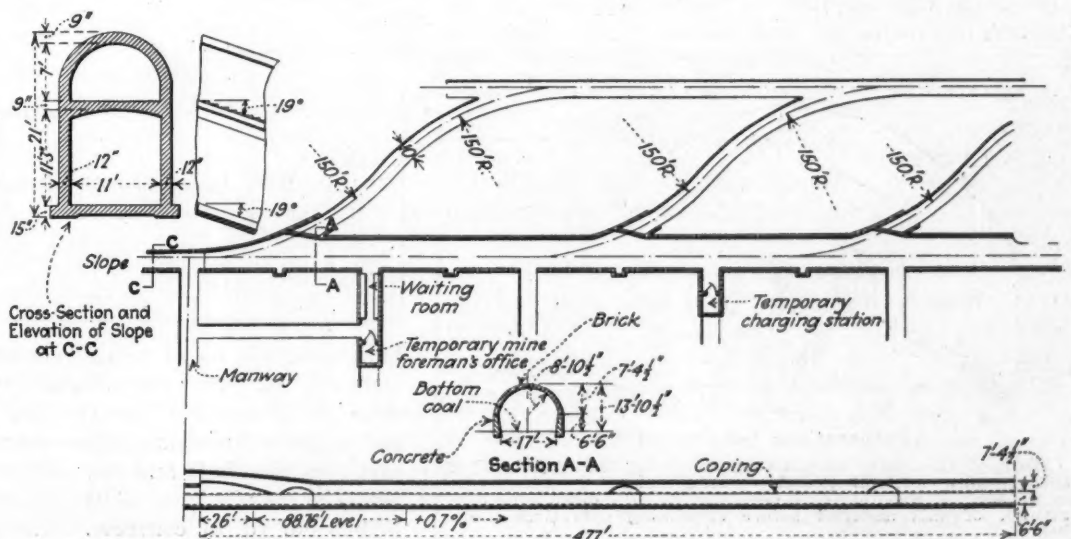
pipe had been demonstrated, plans were drawn for a receptacle and blower. A 12-stall, concrete-lined, underground stable, was the first job performed by this machine. The concrete was mixed at the intersection of the manways, dropped into the blower and conveyed into all of the forms by compressed air.

On Jan. 19, 1919, the connections between the slope and shafts were made, and hoisting from the slope and the skip shaft continued until June, when the mine work was put on a two-shift basis and all coal was sent out by way of the slope. With this arrangement the average daily production for 1919 was 500 tons.

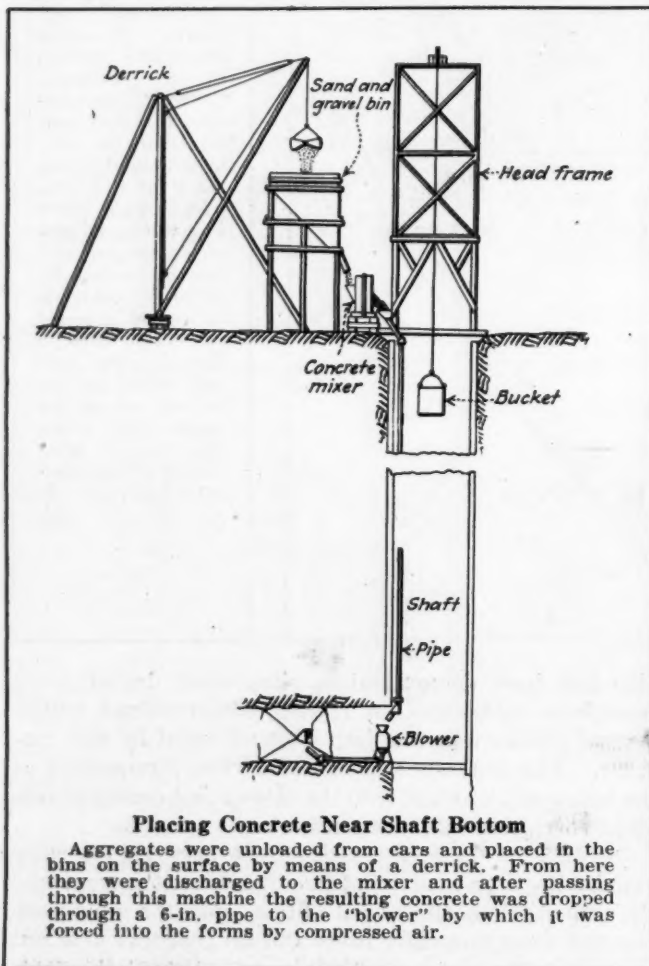
An unusual feature of this mine is the method used in reaching the slope bottom from the four main-line

Slope Bottom

This slope is peculiar in that it is a two-compartment passage. The lower compartment accommodates trips of cars and the upper one serves as a manway. Inasmuch as its pitch is 19 deg. it is provided with steps or stairs in the upper compartment. The total length of this passage is 857 ft.

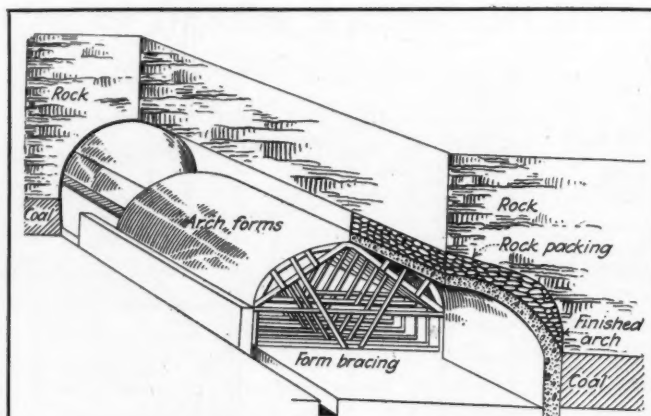
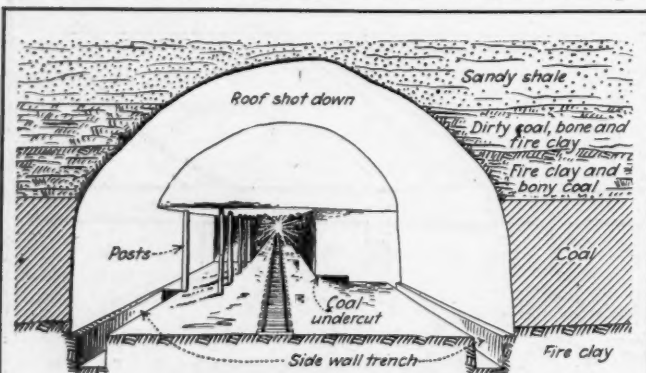


tracks of the skip shaft bottom. Grade crossings were eliminated, and where the trips from the north and south sections run into the "loaded cross-over," an open space was provided to give the motormen a clear view and prevent wrecks. This work is all of brick and steel and was performed without stopping the flow of coal past this point. The mine was then producing about 1,800 tons of coal per day, and the average for the year 1921 was 1,545 tons. This same year it became neces-



sary to enlarge the mine stable to 26 stalls. Again the blower was put to work. Two months later the concrete lined stable was extended to include 15 more stalls, a feed room and a wash room.

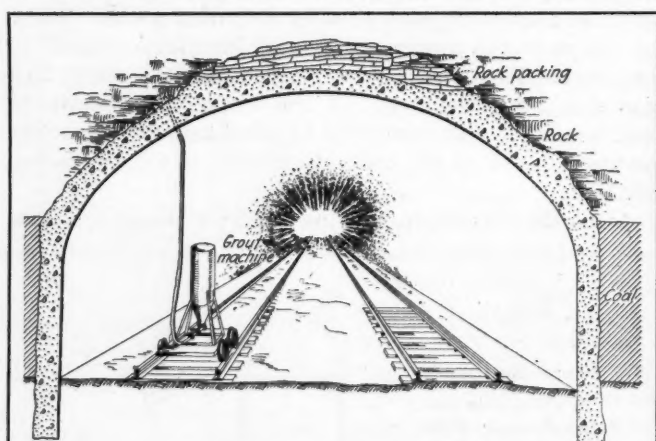
The slope was designed to handle supplies, air and slate and to provide for man travel. When it was put



into service for coal haulage, it was not expected that the traffic through it would exceed 2,200 tons per day. The development of the entries during 1920, however, indicated that it would be necessary to start on the shaft bottom immediately in order to accommodate the increased production.

Plans for concreting were drawn, and the work started Mar. 4, 1921, in the air courses at the bottom of the air shaft. None of the concrete was placed by hand. A derrick on the outside unloaded railroad cars of sand and gravel and loaded the bins. These containers stood above and a little to the rear of the mixer, permitting the flow of aggregates to measuring chutes and thence to the mixer at the shaft top. From the mixer a 6-in. pipe carried the concrete to the bottom and into the blower, from whence it was sent to every point of construction, likewise through 6-in. pipes.

During the period between Mar. 4, 1921, and July of 1925, the time required to do this work, there were

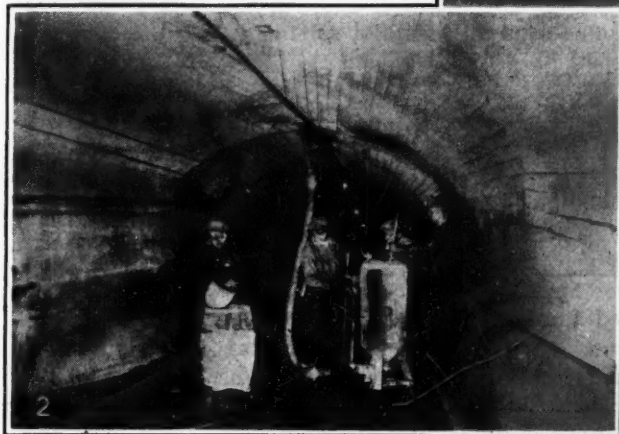
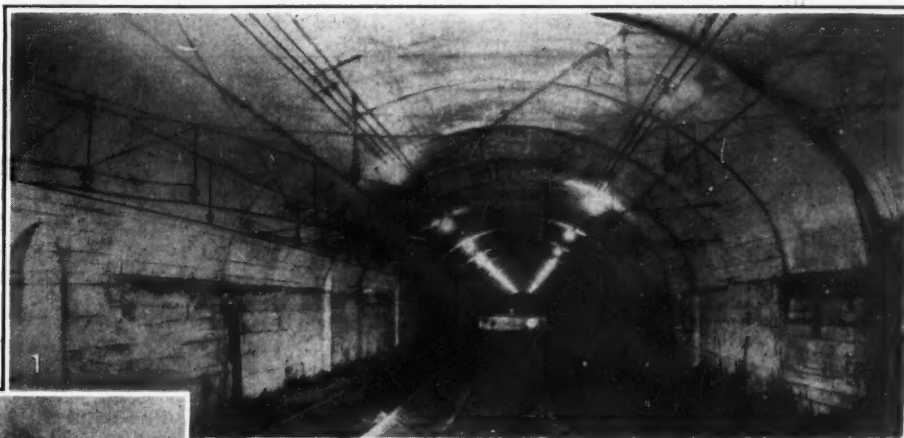


handled 63,880 cu.yd. of excavation and 27,837 cu.yd. of concrete, but the organization which performed the work of concreting the entries, also constructed the stable, mine foreman's office, overcasts in that vicinity, and also the shaft and bins, increasing the quantity of material handled to 68,010 cu.yd. of excavation and 30,303 cu. yd. of concrete. The progress of this concrete arching by years is shown in Table I.

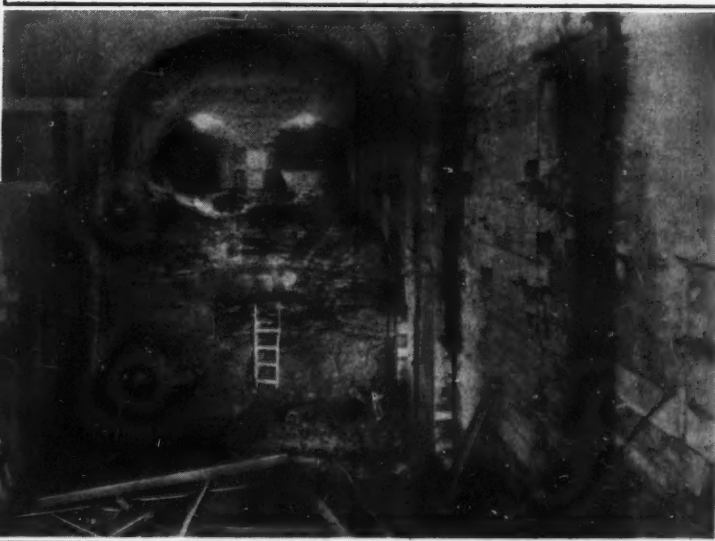
Some Details of Nemaacolin Construction

1. View in completely concreted heading. Note the excellent lighting and trolley suspension.

2. Grouting out ground water. Grout is being forced into the interstices of the rock outside the concrete lining by means of compressed air, making an almost perfect seal.

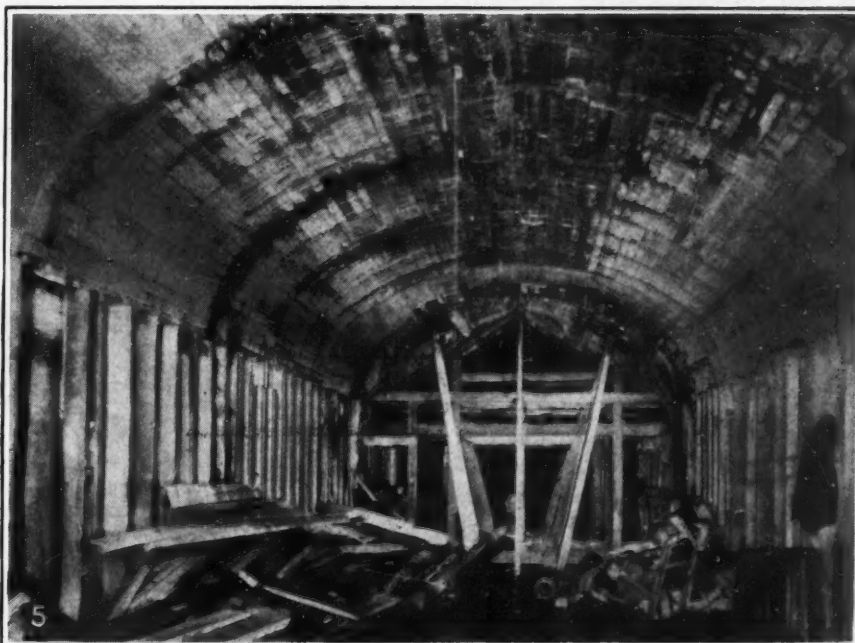
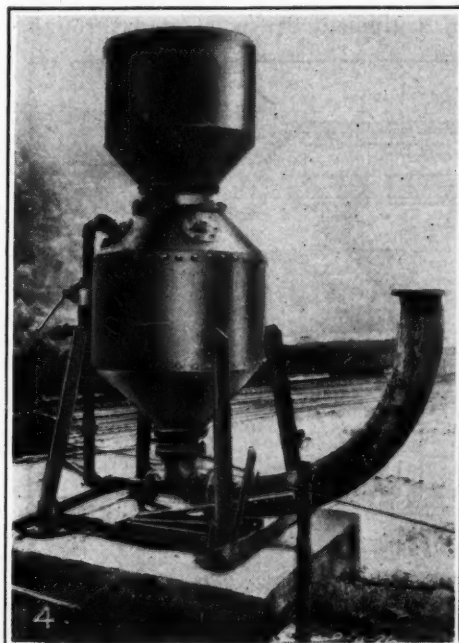


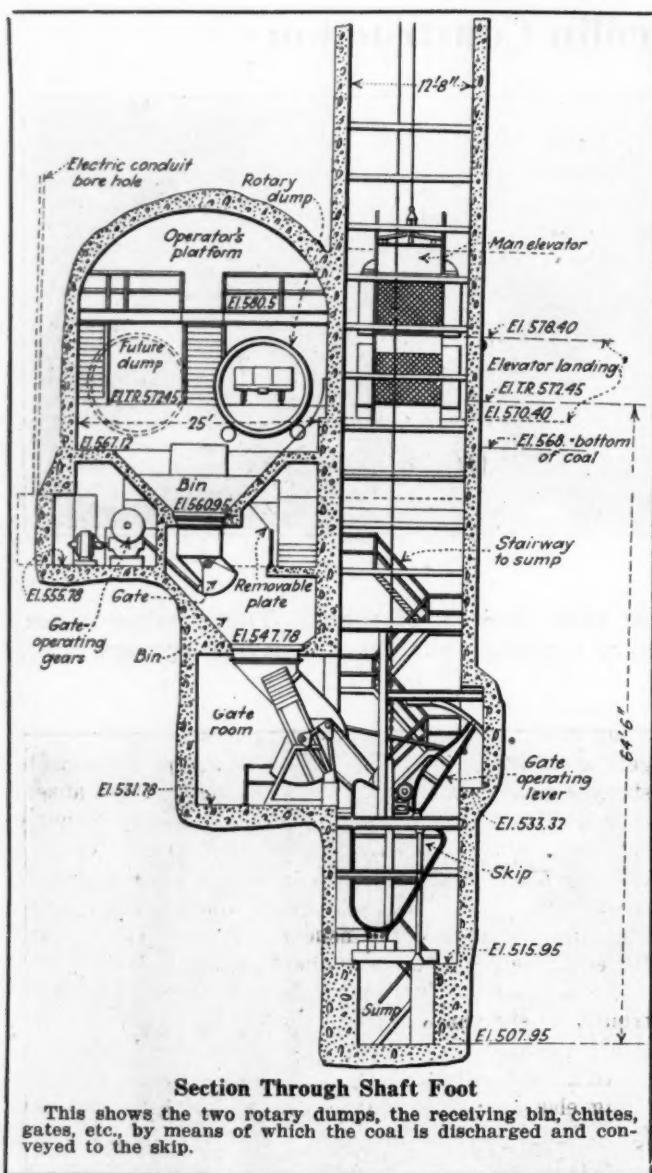
3. Just after removal of forms. This passage is not closed by a gigantic skull as it somewhat appears.



4. Concrete blower. This device was designed and built for the express purpose of forcing concrete into the forms by means of compressed air.

5. Some of the underground construction. Not only were large quantities of concrete used on this job but many thousands of brick as well.





All the concrete in the mine was reinforced.

The slope tippie was erected in the latter part of 1918 and consists entirely of reinforced concrete and steel. One unique feature of this structure is the loca-

tion of the 400-hp. hoist above the haulage track on the tippie. Two single-car rotary dumps in tandem are used to discharge the cars, thus permitting coal to be dropped into one bin and slate into the other. The coal may be shipped from this point by railroad or by truck, if for domestic use. The slate is taken away by a 20-ton electrically driven slate larry.

Construction of the main tippie was not started until Mar. 11, 1924. In this building 845 tons of structural steel was employed. The bin in this tippie that receives the coal from the skips has a normal capacity of 168 tons. From here the coal is fed onto two gravity bar screens by parallel conveyor feeders. The lump coal goes to pan picking tables and the egg is separated from the slack by shaking screens, the resultant sizes being

Table I—Progress Made in Building Concrete Arching

Size	Feet of Entry Concreted				Total
	1921	1922	1923	1924	
25 ft. arch.....	263	952	190	...	1,405
17 ft. arch.....	...	...	792	256	1,148
15 ft. arch, pump room.....	...	63	19	...	82
14 ft. arch.....	180	...	...	...	180
12 ft. arch.....	778	242	...	...	1,020
10 ft. arch.....	729	498	1,494	674	3,395
Totals.....	1,950	1,755*	2,495	1,030	7,230

*Work delayed by nation-wide strike.

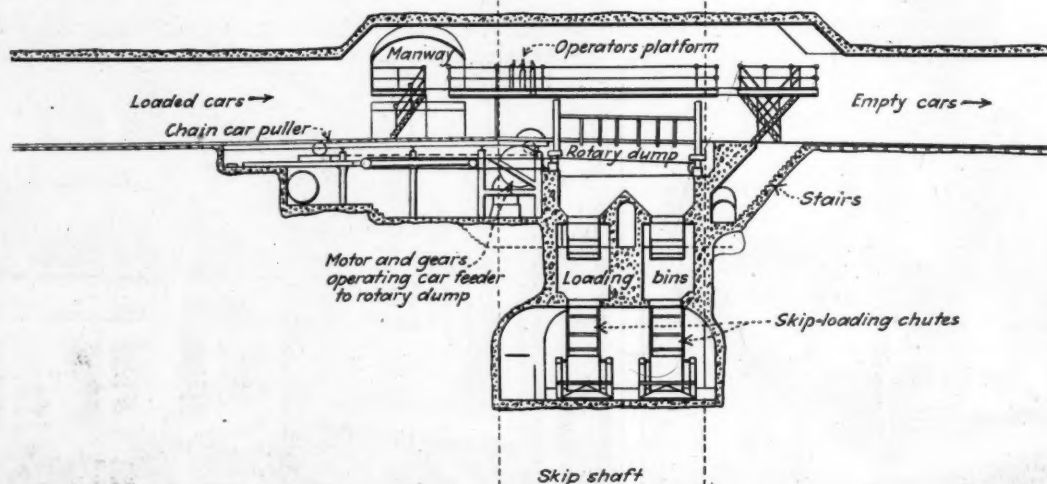
carried parallel to the lump coal on belt conveyors. At the ends of these conveyors, a mixing conveyor traveling at right angles to the picking tables, takes the coal to a small bin from which it is fed into railroad cars. Thus, picked lump and egg, lump and slack, egg and slack, or picked run of mine, may be shipped. This tippie was put into operation in May, 1925, and has a capacity of 1,500 tons per hour.

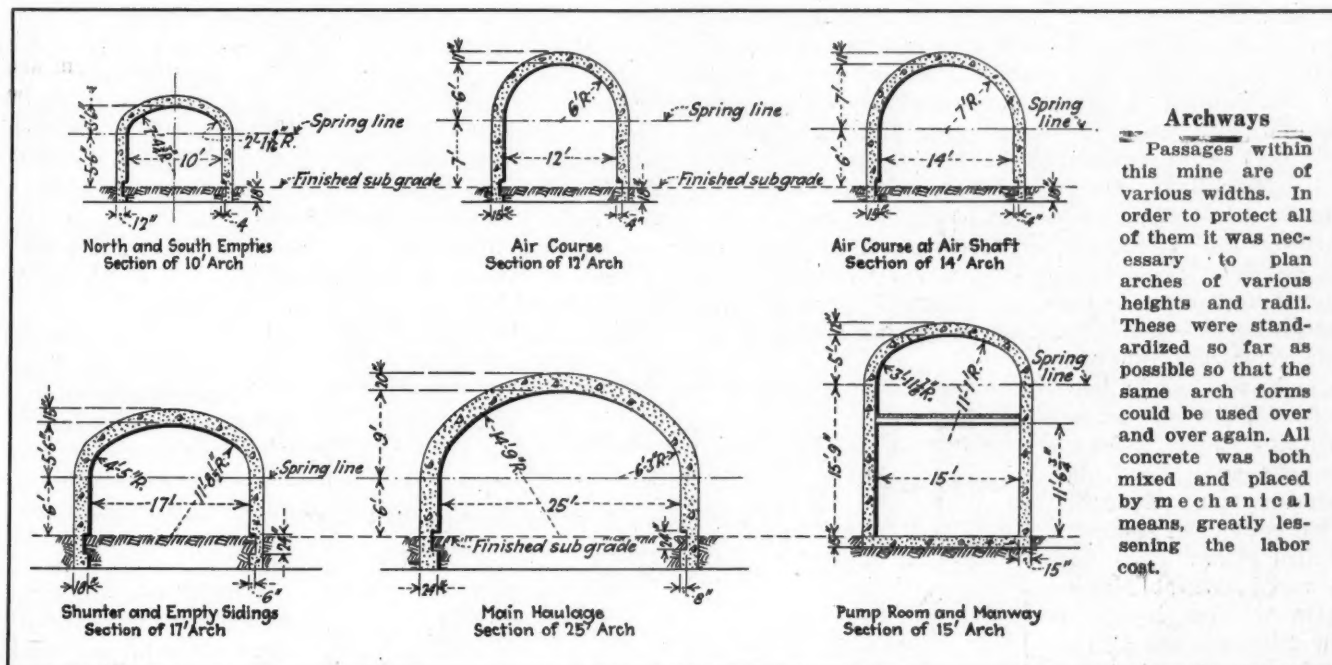
The hoist house at the shaft contains two fly-wheel motor-generator sets, one 1,400-hp. hoist and one 175-hp. man elevator hoist, together with all necessary accessories. The man elevator is a double-decked cage in which 16 men can ride on each deck, or 32 men in all. It is estimated that 1,500 men can be lowered or hoisted in 45 min.

All the wiring between the power house, hoist house, main tippie and mine fan is carried underground, in fiber ducts inclosed within concrete. The feeder lines to the shaft bottom equipment are conducted through

Section of Dump and Loaded Entry

The rotary dump is on a slight inclination but the cars are moved to and through it without uncoupling by means of a chain carhaul. The operator's platform is elevated so that he can see all movements of both cars and dump.





Archways

Passages within this mine are of various widths. In order to protect all of them it was necessary to plan arches of various heights and radii. These were standardized so far as possible so that the same arch forms could be used over and over again. All concrete was both mixed and placed by mechanical means, greatly lessening the labor cost.

two bore holes. One of these enters the main pump room, where automatic controls and automatic priming equipment operate the two 800-gal. per minute centrifugal pumps.

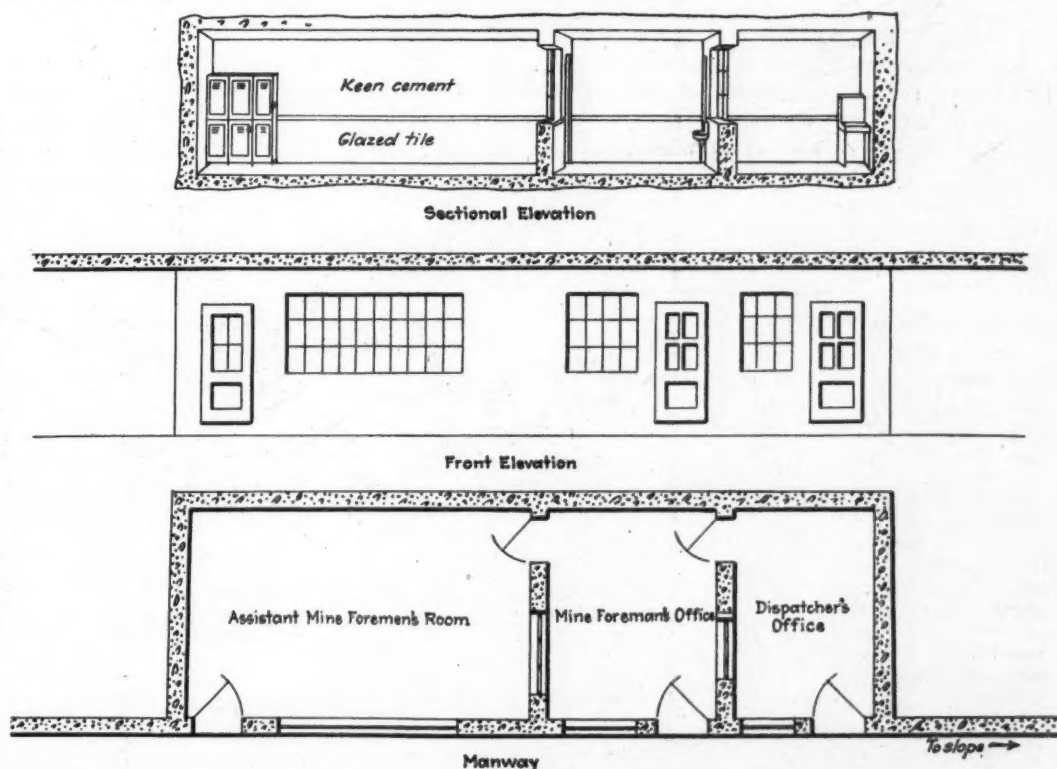
This equipment is guaranteed to do the following:— Prime and start the pump whenever the water in the sump rises to the point for which the float switch is set; prime and start the pump when current comes back on the line after a power failure; the main pump cannot start until it is fully primed; if after being primed and started the main pump fails to take water, it will in a few moments shut down and the priming pump be again started and the process repeated. The pump will automatically shut down when any of the following things happen: When water in sump is drawn down to

a predetermined level; if the suction line becomes clogged and causes excessive suction pull; if the pump gets air through a leak in the suction pipe, connections, stuffing box or any other source sufficient to cause it to stop pumping; if it for any other reason stops pumping water and developing full pressure in the discharge line; or if a break in the discharge line causes pressure to fall. A "notching relay" is so arranged that after the pump makes three unsuccessful attempts to start, the equipment will be permanently cut out, a signal bell will ring, and no further starts will be made until the trouble is eliminated.

A 14x6-ft. Jeffrey multiblade fan furnishes the ventilation for this mine. This machine, as well as everything else about the plant, mine and town, is operated

Underground Office

This structure, which is built of concrete and is consequently fire-proof throughout, contains offices of the mine foreman, assistant mine foremen, and the dispatcher. Such a building affords many advantages over those constructed of wood or less permanent materials. Among its good points might be mentioned the fact that its first cost is practically its only cost as its upkeep is negligible. In this case because of the method employed in its erection the first cost was by no means excessive.



on purchased power. There is this exception, however, that in case of power failure an emergency generator driven by two Sterling gas engines is capable of keeping the fan running at full speed. Two drives are provided on this fan; one by reduction gear and the other by belt, both being operated by 400-hp. motors.

By 1923 Nemacolin mine had advanced too far for continued use of direct-current feeder lines inside. Accordingly, a 22,000-volt alternating-current line was carried over the surface to a point about 7,600 ft. from the shaft bottom, where an automatically controlled substation was constructed above ground and a feeder line conducted into the mine by means of a bore hole. This substation contains one 300-kw. motor-generator set and requires no attendant. The equipment is controlled either from the power house at Nemacolin or from inside of the mine and has all the usual safety features against heated bearings, overloads, no loads or other troubles to which it may be subjected.

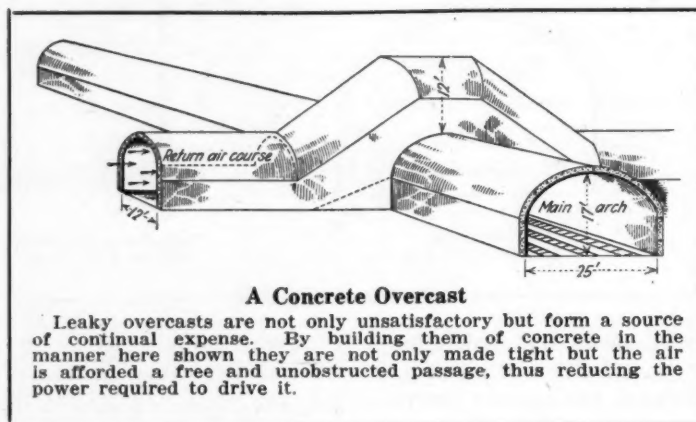
The railroad sidings have a capacity of 120 empties and an equal number of loads. The empty tracks are laid with 80-lb., and the loaded ones with 100-lb. rail. Both empty and loaded tracks are level, except for a distance of 500 ft., where the loads leave the tippie. A set of railroad scales,

with a Streeter-Amet weighing device, weighs the coal after it has moved about 150 ft. from the center line of the tippie. The empty cars are pushed down to a point where the railroad car puller can reach them. This machine is a double-drum hoist set in a concrete pit about 320 ft. above the tippie. A continuous cable extends from the hoist to a sheave at the lower side of the tippie. Short pieces of cable with a hook on one end and a grip on the other serve to connect the trip of railroad cars to the continuous cable. A 30-ton steam locomotive shunts the cars around the yard.

The shop is built of steel and brick. It is 150 ft. wide and 80 ft. long, with provision for adding 120 ft. more to its length whenever necessity may require. All classes of mine repair work are performed in this building.

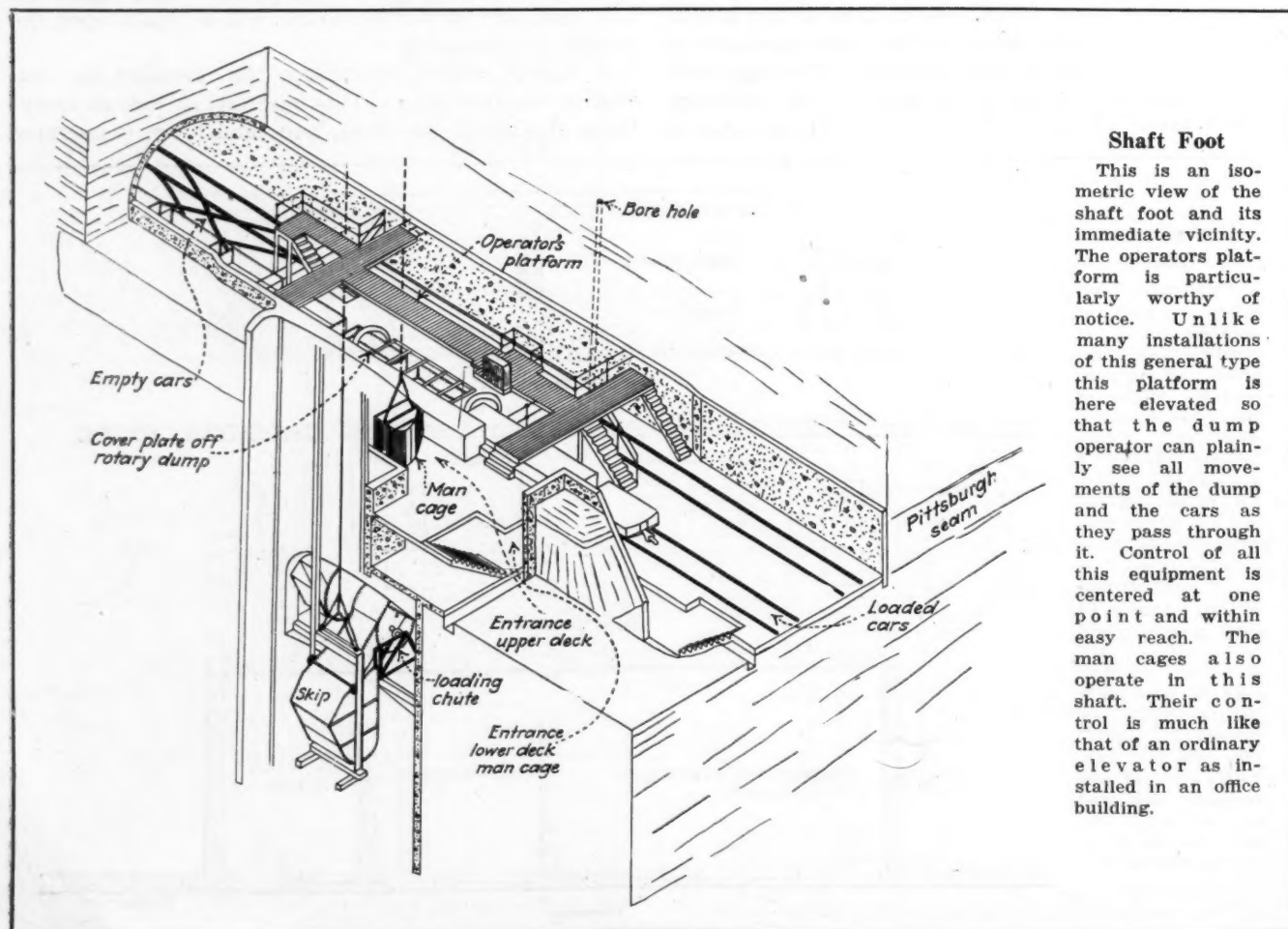
Within the town of Nemacolin the streets were all laid out with grades not to exceed 10 per cent. This was accomplished in every case, except one—a connection from the temporary store to the theater.

Four types of construction were used—a brick road, a water-bound macadam road, a sandstone Telford base with graded slag and tarvia binder on top, and a sandstone base covered with granulated slag. The brick and tarvia roads were completed in June, 1921. Since then,



A Concrete Overcast

Leaky overcasts are not only unsatisfactory but form a source of continual expense. By building them of concrete in the manner here shown they are not only made tight but the air is afforded a free and unobstructed passage, thus reducing the power required to drive it.

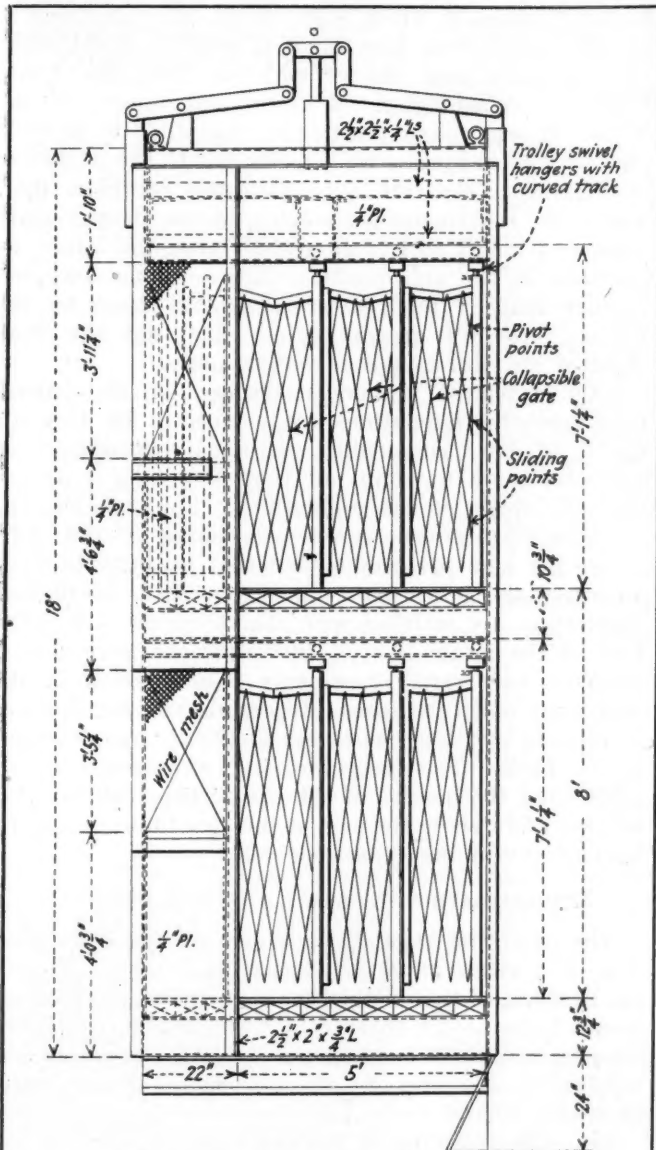


Shaft Foot

This is an isometric view of the shaft foot and its immediate vicinity. The operators platform is particularly worthy of notice. Unlike many installations of this general type this platform is here elevated so that the dump operator can plainly see all movements of the dump and the cars as they pass through it. Control of all this equipment is centered at one point and within easy reach. The man cages also operate in this shaft. Their control is much like that of an ordinary elevator as installed in an office building.

little patching has been necessary on the tarvia, while the brick road has needed no attention whatever, except to fill expansion cracks. Drainage has been well taken care of and to this can be ascribed the long road life.

Twenty-five different types of houses have been built in the town and these have been varied slightly to break up the sameness of appearance. Seventy-three



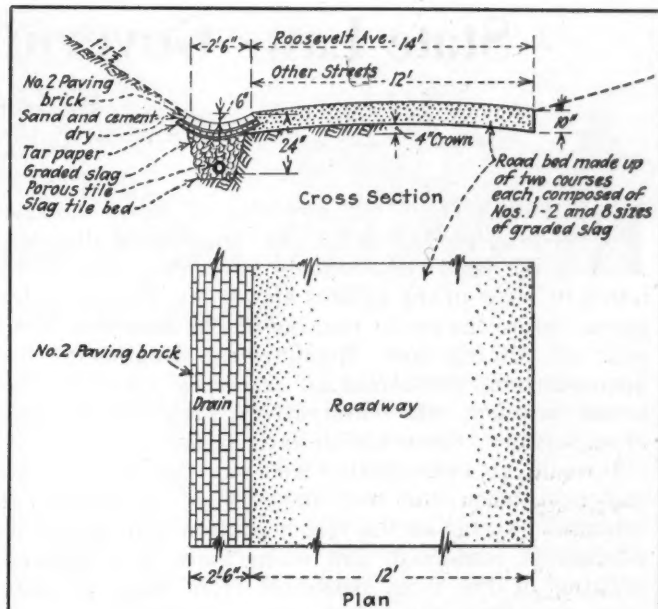
Passenger Elevator or Man Cage

Unlike most mines this one is fitted with a double-decked passenger elevator similar to those used in office buildings. This machine is much more rapid in handling men than the ordinary cage. It is also claimed to be safer which is a distinct advantage.

of the houses have concrete foundations, 62 tile block and the remainder concrete block plastered on the outside. All have concrete-floored basements, containing furnaces, coal bins and laundry space. Bath tubs or showers provide the facilities for cleanliness, as every house has a hot water tank and piping, in addition to the cold water facilities.

Sanitary sewers take care of the waste water and toilets. The sewage is carried to two Imhoff tanks, just north of the hoist house, and the effluent treated with chlorine.

Electric street lamps and complete wiring of the houses furnish the means for lighting the entire town. The seating capacity of the theater is 550. On the

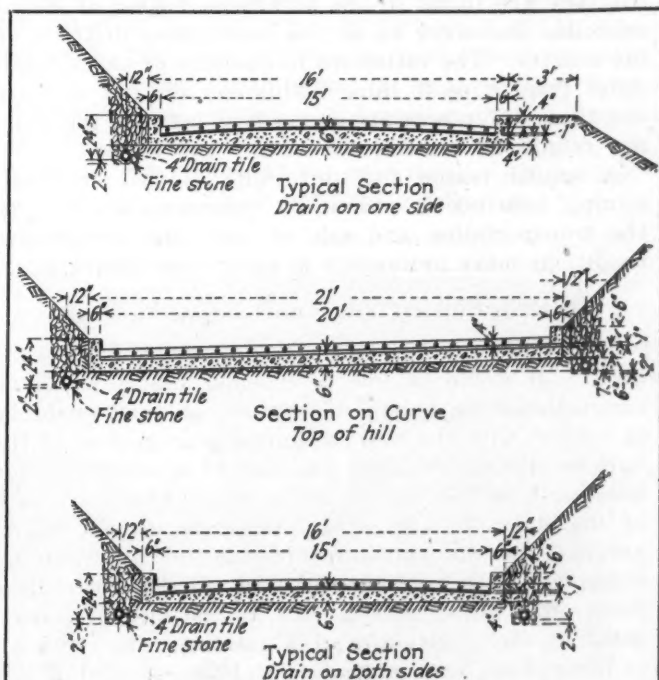


Plan and Section of Slag Roadway

Concrete roads are naturally preferred by most people but the expense of their construction is not justified unless the traffic is comparatively heavy. A road such as here shown is fairly cheap to build and answers every purpose where traffic is light.

lower or south ground-level floor, there are a barber shop, pool and bowling alley space and a refreshment room.

The water mains throughout the town are cast iron, of 6- and 8-in. diameters. The pressure is obtained by a standpipe 20 ft. in diameter and 110 ft. high set on the highest elevation of the town. The water is obtained



Sections of Street Pavements

Building roads has become almost as scientific an operation as building railways. Not only must the modern highway be properly constructed but it must be banked on curves.

from seven deep wells, three of which are held in reserve. Before it is pumped to the standpipe on the hill, the water goes to a concrete cistern for aeration. From here a 5-stage centrifugal pump lifts it to a height of 550 ft., into the standpipe.

State Laws Governing Mine Ventilation*

By George S. Rice

Chief Mining Engineer, U. S. Bureau of Mines,
Washington, D. C.

BY DIRECTING the attention of those engaged in coal production to the remarkable diversity in the legal requirements governing mine ventilation in force in the various states, Mr. Garcia, in his paper, before the recent meeting of the American Institute of Mining and Metallurgical Engineers, has unquestionably performed an extremely useful service to the industry. He conservatively says that this lack of uniformity "seems almost entirely unnecessary."

I would go even further and say that in this day and age, when the coal industry is practically all interstate, so far as the transportation and sale of its product is concerned, and when there is a constant shifting of the mine personnel from state to state, these variations are unfortunate in two ways.

They are unfortunate, first, from a safety standpoint, inasmuch as mine officials, who have been working in states where the legal requirements are lax when they move to other states with more stringent regulations, are apt to introduce the dangerous practices to which they have been accustomed.

Positive circulation of good air, all mining men will agree, is so vital that without it extensive coal mining could not be carried on. There are no geological boundaries which affect the presence of gases in coal mines. The same kind of methane, carbon-dioxide, nitrogen and oxygen (CH_4 , CO_2 , N and O) gases, which normally are found in the anthracite region of Pennsylvania, also occur in all the coal-mining districts of the country. The variations in quantity of gases found differ from mine to mine within any district or state and these differences are as much as between the average conditions encountered in any two states.

A second reason for uniformity is that the coal-mining industry is practically interstate business in the transportation and sale of coal, and competitive conditions make uniformity in safety cost desirable.

MINING COMMITTEES MIGHT SOLVE PROBLEM

The problem is how can such uniformity be brought about. It would be idle to consider that it could be accomplished by federal legislation, as that would be in conflict with the well-recognized prerogatives of the various states. Perhaps, one way of approaching this question might be for the coal-mining industry in each of the states to urge their respective legislatures to arrange for the appointment of a technical mining committee that would confer with similar committees from other states with a view to the ultimate enactment by each legislature of a uniform code.

When Congress, on Feb. 25, 1920, enacted a law providing for the leasing of all coal land on the public domain, instead of selling it outright, as had been previously done, it included a provision that before leases were made, the Secretary of the Interior should prescribe regulations governing safety and health of the workers and proper mining of the coal, but that these regulations must not conflict with the state laws.

The task of drawing up these rules was entrusted to the Bureau of Mines. We, of the Bureau, tried to prepare regulations that would dovetail into the codes of the public-land states, such as Colorado, Utah, Wyoming, Washington, Montana and others in the West. It was found practically impossible to do this, and, as a consequence, we were driven to the expedient of making a separate code with the provision that, where its requirements covering leases in any state were in conflict with that state's laws, the latter, as provided in the act, would control. It was excepted further that, if the provisions as laid down by the Bureau provided greater safety than did the state statutes, the Bureau's code was to apply.

This statement is here made because the federal lease operating-regulations are included in Mr. Garcia's digest of laws concerning coal-mine ventilation. It will also serve to point out that bare figures do not give the spirit of the regulations. For example, the operating-regulations require a minimum of 100 cu.ft. of air per man per minute, but that quantity is to be measured at the last cross-cut of any split. Most state regulations are satisfied with measuring the air at the foot of the intake shaft. Investigations have shown, however, only rarely does more than one-half of the intake air reach the faces. In certain records obtained in Illinois, less than one-fourth of the air was delivered to the faces. The foregoing, and other requirements concerning the quality of the air perhaps call for furnishing more air to the men at the face than the mining laws of any of the states demand.

MECHANIZATION INTRODUCES SPECIAL PROBLEMS

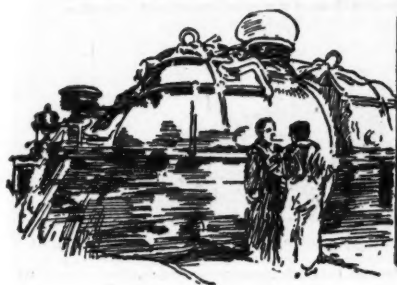
The operating regulations also place the determination of a gassy mine on an analytical basis. This is the first use of this method made in any country except Great Britain. In their final form, these regulations were approved by a committee of mine operators and inspectors appointed by the governors of the states in which federal coal lands were located.

Since the adoption of the operating regulations, the Bureau of Mines has given consideration, in the light of experience gained, to what improvements could be made in order to assure greater safety.

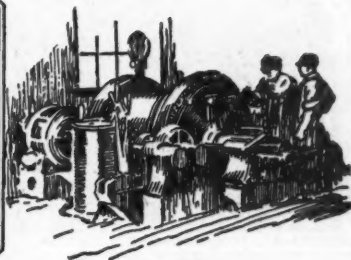
The supervision of the federal coal leases passed to the U. S. Geological Survey when the Bureau of Mines was transferred (July 1, 1925) from the Department of the Interior to that of Commerce. As a result, any views concerning the betterment of coal-mining regulations are simply recommendatory to the industry.

The most important problem in connection with coal-mine ventilation that has been considered by the mine safety board of the Bureau relates to the definition of a "gassy or a non-gassy mine." The more extensive use of electricity, the introduction of new mining machinery, of new methods of illumination and of new methods of mining, as well as the increasing quantity of methane encountered in deeper mining, makes the question of when or where to use, or not to use methods, machinery, or appliances that may cause ignition of firedamp, a most important consideration.

*Discussion of paper entitled, "State Coal Mining Laws Concerning Ventilation," presented before the Pittsburgh meeting of the A.I.M.M.E., Oct. 5 to 9, 1926.



Practical Pointers For Electrical And Mechanical Men

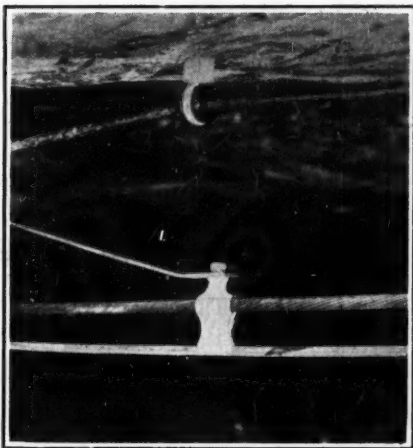


Cable Is Easily Tightened from Dead End

It is always interesting and instructive to note the standard practices of the large producers. The accompanying photograph, made in No. 4 mine at Omar, W. Va., shows the type of telephone wire and method of support used in the newer underground installations of the West Virginia Coal & Coke Co.

CONDUCTORS WELL PROTECTED

The wire or cord contains two No. 16 tinned-strand copper conductors, each of which is bound with a light braid, then covered with approximately $\frac{1}{8}$ in. of rubber which is in turn covered with a single braid. The twisted pair is then filled and covered with rubber to form a round cord, this adding another $\frac{1}{8}$ in. of insulation over the conductors. The



Telephone Cable Support

The cable fits loosely within a porcelain insulator. Should this conductor be broken or stretched by a roof fall or otherwise its entire length may be tightened by taking up the slack at the end.

whole is then encased in a $\frac{1}{8}$ -in. braid of strong cotton cord applied with a spiral weave. The surface is then treated with waterproof compound.

BREAKS REPAIRED EASILY

This cord is supported by porcelain insulators which have holes through the center. Each insulator is held in place by a screw-eye that

is forced into a wooden plug set in the roof. The advantage claimed for this method of suspension is that in case of a fall that breaks or stretches the cord, the whole line can be tightened by taking up at the dead end or point of strain. W. H. Cook, chief electrician, is the man who introduced this telephone line construction in the mines of the company. It has been in use under varying conditions for a sufficient length of time to thoroughly demonstrate its efficacy and reliability.

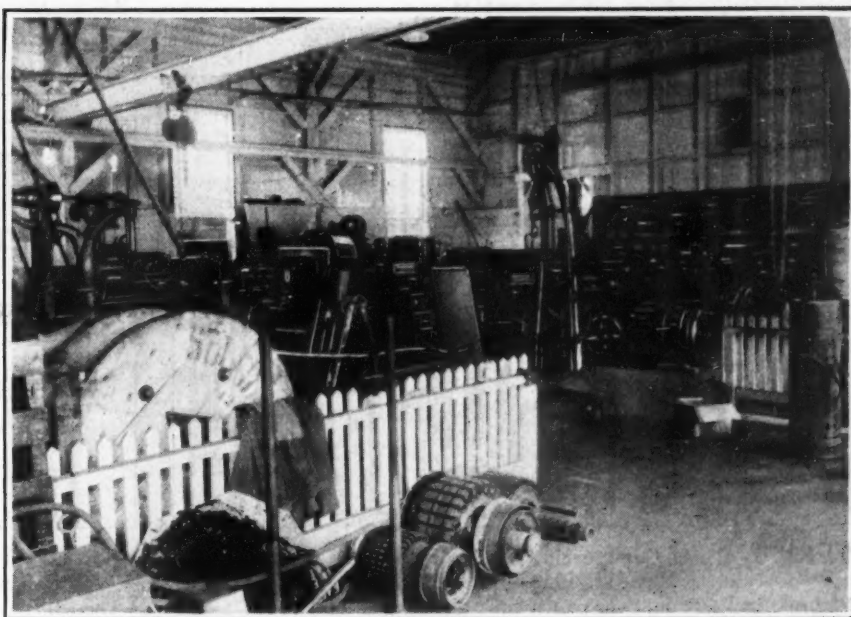
Grinding, After Tempering Bits, Does Not Pay

For several years the standard method of resharpening mining machine bits used at the New Orient mine has been to re-form them on a roller sharpener. After rolling to shape they are tempered by plunging at the heat at which they left the sharpener. Someone suggested that it might pay to temper the points carefully, and to grind them after re-forming.

Accordingly a few sets of bits were prepared in this way and a test made to determine the advantage, if any, in power consumption. This test was conducted by A. E. Giles, chief electrician of the Chicago, Wilmington & Franklin Coal Co. The results are as follows:

	Bits Roller Sharpened and Hardened	Bits Ground After Rolling and Tempering
Sq. ft. undercut.....	154	172
Tons.....	44	49
Kw.-hr. consumed in making undercut...	7.1	6.73
Kw.-hr. per ton.....	.161	.137
Kw.-hr. per sq. ft. undercut.....	.046	.039
Average amperes....	71	58
Average volts.....	231	211

In these tests the same shortwall machine was used, the same crew cut both places, and the cutting was done in adjacent rooms. The ground and tempered bits showed a 15 per cent reduction in power consumed, but this represents a saving of less than \$5 per day for a 10,000-ton production. Since the extra cost of tempering and grinding would be considerably more than this amount, no change has been made in the method of bit sharpening followed.



Omar Shop, West Virginia Coal & Coke Co.

This is the central shop of the Logan division. A traveling crane serves the main room and a portable floor crane the winding room from which the photograph was made. A huge armature rack takes up most of the rear wall. The shop is kept clean and is well lighted.



News Of the Industry



Consumers' Soft Coal Stocks on Oct. 1 Total 44,000,000 Tons; Reserves Gain Despite Steady Advance in Exports

Stocks of bituminous coal in the hands of consumers on Oct. 1, according to a survey by the U. S. Bureau of Mines, were approximately 44,000,000 net tons, an increase of 5,000,000 tons over the total on July 1, the date covered by the last preceding estimate. The figures are based on reports from 5,000 representative consumers in all kinds of industries scattered over all the states. Despite a sharp advance in the volume of exports stimulated by the British miners' strike, production in August and September was sufficient to meet domestic consumption and provide a surplus to be added to storage piles. At the rate of consumption prevailing in August and September the stocks on hand Oct. 1 were sufficient to last 35 days if evenly divided. In addition to the stocks of consumers there were 7,488,000 tons on the upper lake docks, as against 7,512,000 tons on Nov. 1 last year.

From known facts of production and exports, the Bureau of Mines states, it is probable that further additions to stocks have been made since Oct. 1.

In August and September the average rate of consumption in the United States, exclusive of addition to stocks, was 9,337,000 net tons a week. Exports amounted on the average to 936,000 net tons a week, and the total of consumption plus exports was 10,273,000 tons.

As production and imports averaged 10,949,000 tons, there was a surplus over consumption and exports of 676,000 tons a week, part of which was added to consumers' stocks and part to the quantity of coal in transit.

This rate of consumption—9,337,000 tons—was about the same as that of September, 1923, and, as might be expected, it was above the depression years 1921 and 1922 and below the war year 1918. On the other hand, the weekly exports of 936,000 tons were more than twice the normal rate, reflecting the extraordinary demand created by the British strike. The total consumption plus exports—10,273,000 tons a week—was much greater than at any other of the periods shown, except for the fall of 1925, when the bituminous mines were being called on

Average Weekly Soft-Coal Exports and U. S. Consumption*

		(In Millions of Net Tons)	
Period	Net U. S. Consumption ^a	Exports	Total Consumption and Exports ^a
1918—July 15 to Oct. 1	9,628	569	10,197
1921—Aug. 1 to Nov. 1	7,298	361	7,659
1922—Oct. 1 to Nov. 1	8,406	437	8,843
1923—Sept. 1 to Oct. 1	9,534	462	9,996
1925—Sept. 1 to Nov. 1	10,081	369	10,450
1926—May 1 to July 1	8,026	470	8,496
1926—Aug. 1 to Oct. 1	9,337	936	10,273

*Allowing for changes in stocks.

(a) Production plus imports and minus exports plus or minus changes in stocks. Allowance is made for stocks at the mines, coal in transit, including unbilled loads, coal in cars en route to destination, coal on the Lake docks and stocks of consumers.

(b) Period of anthracite strike. Bituminous coal required to replace anthracite.

to meet the deficit in anthracite caused by the miners' strike.

The figures of United States consumption given in the foregoing table represent the actual consumption of all users who buy in carload lots and the deliveries of retailers to the smaller consumers, including many hotels, apartment houses, office buildings and small industrial plants as well as householders. The rate of consumption tends to vary with the season.

Stocks of industrial plants on Oct. 1 were smaller than on Nov. 1, 1925, but the decrease is unevenly distributed, the variations being shown in Fig. 4.

Complete returns from the 77 by-product coke plants of the country show a total of 4,491,303 tons of coking coal in stock on Oct. 1, of which 988,260 tons was low-volatile and 3,503,043 medium- or high-volatile coal. The 194 steel works reporting had a total of 2,102,000

Byproduct Coke Plants

	Days' Supply	
	Aug. 1	Oct. 1
Low volatile.....	24	23
High volatile.....	24	27
Average.....	24	26

Steel Works

	Days' Supply	
	Aug. 1	Oct. 1
Gas coal.....	35	36
Steam coal.....	30	38
Average.....	32	37

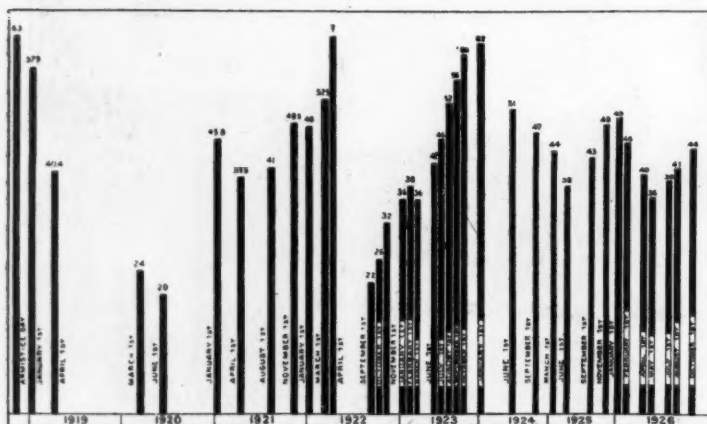


Fig. 1—Total Commercial Stocks of Bituminous Coal
Nov. 11, 1918—Oct. 1, 1926.

Figures represent millions of net tons and include coal in the hands of railroads, industrial consumers, public utilities and retail dealers. Coal for steamship fuel, on lake docks, in transit, and in the bins of householders is not included. From July 1 to Oct. 1, stocks increased about five million tons, bringing the total up to about the same level as that of the corresponding season of 1925. Since Oct. 1 further additions to stocks have been made.

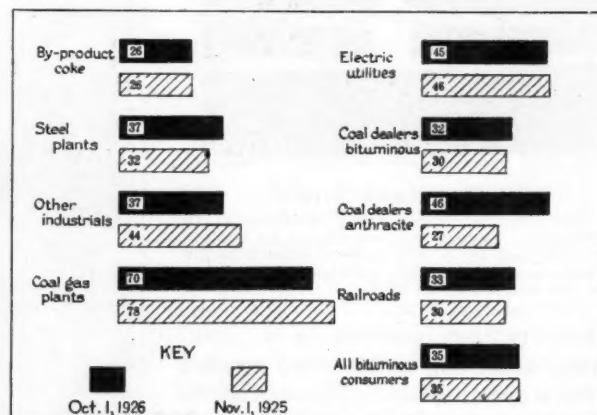


Fig. 2—Days' Supply Held by Different Classes of
Consumers, Nov. 1, 1925, and Oct. 1, 1926

Though the total stock in tons was somewhat less on Oct. 1, 1926, than on Nov. 1 a year ago, the average days' supply for all classes of consumers combined was the same. This is because the present rate of consumption for all purposes is less than that of a year ago, when bituminous coal was being used to replace the anthracite lost on account of the miners' strike.

tons on hand of which 726,000 tons was gas coal and 1,376,000 tons steam coal. The days' supply as shown here-with compares favorably with that on other recent dates.

The total quantity of bituminous railroad fuel coal on hand Oct. 1, according to the American Railway Association, was 11,214,000 tons, sufficient to last 33 days at the average rate of consumption in August and September. Comparable figures for other dates are: June 1, 1920, 3,744,000 tons; Oct. 1, 1922, 5,423,000 tons; Oct. 1, 1923, 17,663,000 tons; Oct. 1, 1924, 13,166,000 tons; Oct. 1, 1925, 11,206,000 tons; July 1, 1926, 9,398,000 tons; Aug. 1, 1926, 10,347,000 tons.

From a list of 43 companies who have at some time in the past stored in quantity at the mines or at some intermediate point, the Bureau has received reports of only 148,000 tons so held on Oct. 1, or 26,000 tons less than the figures for July 1, 1926, the date of the last stock report.

The total quantity of bituminous coal unbilled in cars at the mines dropped from 888,000 tons on July 1 to 554,000

Days' Supply of Bituminous Coal in Hands of Various Classes of Consumers in the United States, Jan. 1, 1919, to Oct. 1, 1926

(Figures represent number of days that supply would last at rate of consumption at time of stock taking)

	Jan. 1, 1919	Nov. 1, 1921	Nov. 1, 1922	June 1, 1923	Oct. 1, 1923	Sept. 1, 1924	Sept. 1, 1925	Nov. 1, 1925	Apr. 1, 1926	July 1, 1926	Aug. 1, 1926a	Oct. 1, 1926a
Byproduct co plantske.	32	30	18	23	33	30	22	26	21	23	24	26
Steel plants.....	42	46	21	29	39	42	30	32	24	26	32	37
Other industrials.....	65	67	39	39	56	48	30	44	22	35	35	37
Coal-gas plants.....	81	87	55	75	91	90	67	78	60	72	61	70
Electric utilities.....	49	54	32	45	49	58	43	46	46	52	45	45
Coal dealers (bitum.)...	39	46	21	27	36	46	27	30	14	43	31	32
Railroads.....	32	29	13	21	41	42	28	30	23	27	30	33
Total bituminous....	42	43	23	30	45	45	32	35	26	34	33	35

(a) Calculated at average rate of consumption during August and September, 1926.

tons on Oct. 1, about the same figure as that of a year ago.

Reserves of bituminous coal on the upper lakes continued to increase up to Oct. 1, the total as of that date—7,487,598 tons—comparing favorably with that at corresponding periods of other recent years, as shown by the following: Nov. 1, 1921, 8,824,297 tons; Oct. 1, 1922, 1,581,391 tons; Oct. 1, 1923, 6,861,106 tons; Sept. 1, 1924, 6,600,000 tons; Nov. 1, 1925, 7,512,000 tons.

Sustained heavy production of an-

thracite since the settlement of the miners' strike last February has enabled retail coal dealers to build up their depleted stocks, and the quantity of anthracite in retail yards on Oct. 1 was close to normal for this season of the year. At the rate their customers were ordering coal in August and September, the stocks of the dealers reporting on Oct. 1 were sufficient to last 46 days. Their stocks on Oct. 1 were nearly as great as on similar dates in 1921 and 1924, and very much greater

Supply of Soft Coal in Hands of Industrial Consumers, Utilities and Retailers Oct. 1, 1926, and Comparison with Stocks on Previous Dates

DAYS' SUPPLY HELD BY REPRESENTATIVE INDUSTRIAL CONSUMERS, PUBLIC UTILITIES, AND RETAIL COAL DEALERS, OCT. 1, 1926

(Figures represent number of days stock would last at current rate of consumption)a

PER CENT OF CHANGE IN TONS ON HAND AT CERTAIN PLANTS ON OCT. 1, 1926, COMPARED WITH WHAT IDENTICAL PLANTS HAD IN THE PAST

(Includes only plants for which stock data were available on each date shown)

State	Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric 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Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers, Bituminous		Electric Utilities		Coal-Gas Plants		Industries Other Than Steel and Coke		Retail Coal Dealers	
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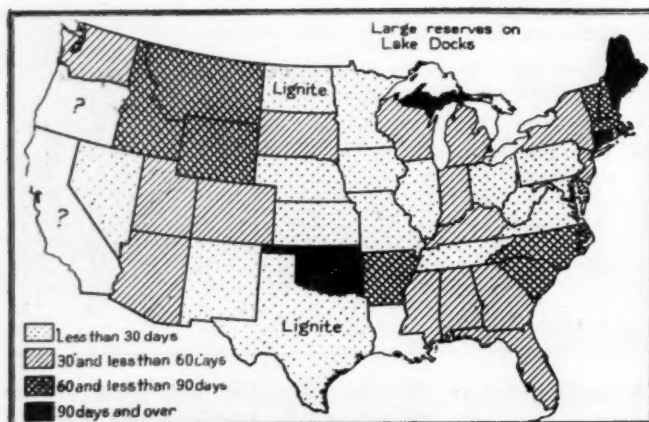


Fig. 3—Days' Supply of Soft Coal on Hand at Industrial Plants Other Than Steel and Coke Works Oct. 1, 1926

This diagram shows state by state the days' supply of soft coal held at different classes of industrial plants other than steel and byproduct coke works. The average supply for all such consumers throughout the country was 37 days, but in particular states the supply on hand varied widely.

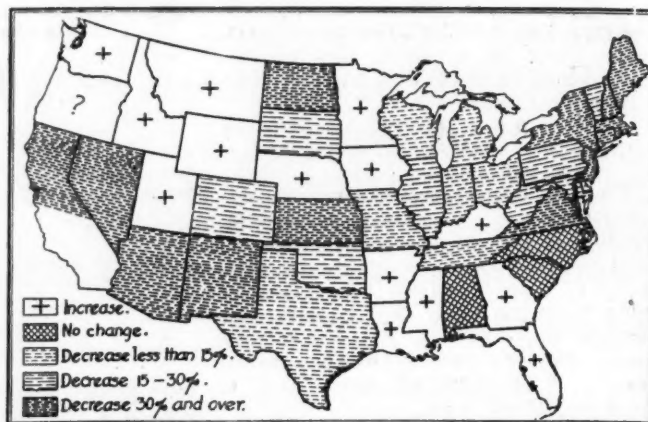


Fig. 4—How Stocks at Industrial Plants on Oct. 1, 1926, Compared with Those on Nov. 1, 1925

In much of the West and South stocks of coal at industrial plants were greater on Oct. 1, 1926, than a year ago. In the Southwest, however, and east of the Mississippi and north of the Ohio and Potomac, there was a general decrease; this was marked in New England and the Middle Atlantic States.

than in 1922 and 1923. There was a decrease in comparison with Sept. 1, 1925, but extraordinary reserves had been accumulated then in anticipation of the suspension.

Dealers' stocks of soft coal on Oct. 1 also were up to normal for the season. The dealers reporting had somewhat less soft coal in stock than on similar dates in 1921 and 1923, but more than in 1922 and 1924. Indeed the 1926 stocks are almost equal to those on Sept. 1, 1925, when additions had been made to the usual reserves because of the impending strike.

The stocks of anthracite on the upper lake docks are also not far from normal for this season of the year. Reports to the Bureau of Mines direct from the operators show a total of 1,145,546 net tons on hand, compared with the following figures for other dates: Nov. 1, 1921, 1,316,070 tons; Oct. 1, 1922, 36,999 tons; Oct. 1, 1923, 311,410 tons; Sept. 1, 1924, 1,400,000 tons.

Surplus stocks of coke at byproduct plants on Oct. 1 were not unusual for this season of the year. A group of 21 byproduct plants supplying gas for city use and producing coke suitable for domestic fuel which have been reporting their stocks to the Bureau of Mines in recent years had a total of 628,000 tons of coke on hand. Figures for corresponding dates in other years are: Jan. 1, 1922, 1,017,000 tons; Oct. 1, 1922, 250,000 tons; Oct. 1, 1923, 476,000 tons; Sept. 1, 1924, 1,114,000 tons; Sept. 1, 1925, 865,000 tons; July 1, 1926, 334,000 tons; Aug. 1, 1926, 470,000 tons.

Anthracite Circular Prices for November at New York

(Per Gross Ton f.c.b. Mines)

	Broken	Egg	Chest-	Stove	nut	Pea
Lehigh & Wilkes-Barre Coal Co., D., L. & W. Coal Co., Phila. & Reading Coal & Iron Co., Lehigh Valley Coal Sales Co., Hudson Coal Co., Lehigh Coal & Navigation Co., M. A. Hanna Co., Buickwheat No. 1, and barley, \$1.50@ \$1.75	\$8.25	\$8.75	\$9.25	\$8.75	\$6.00	
Co.,	8.25	8.75	9.25	8.75	6.50	
Co.,	9.15	9.15	9.40	9.15	6.50	
Co.,	8.50	9.00	9.35	9.00	6.00	
Co.,	9.00	9.00	9.35	9.00	6.00	
Co.,	9.25	9.25	9.50	9.10	6.35	
Co.,	9.00	9.25	9.60	9.25	6.50	
Co.,	\$2.50	@ \$3;	rice, \$2 @ \$2.25;			

Miners' Pay Advanced In Harlan, Pocahontas And New River Regions

The Harlan County Coal Operators' Association, in southeastern Kentucky, with a reported monthly payroll of \$2,000,000, and employing more than 8,000 men, has announced a 20-per cent increase in wages, effective as of Nov. 1, according to an announcement late last week by E. R. Clayton, secretary of the association. The increase came as a surprise to the workers, no intimation having been given of it. There are 75 mines in the ranks of the association members, with a daily output of 250,000 tons, and representing all but about 10 of the tipples mines in the county.

The principal mines affected are those of the Cornett Lewis Coal Co., High Splint Coal Co., Harlan Liberty Coal Co., United States Coal & Coke Co., Black Mountain Corporation, Bonita Coal Co., Harlan Collieries Co., King Harlan Coal Co., J. L. Smith Coal Co., Harlan-Wallins Coal Co., Melcroft Coal Co., Harlan Fox Mining Co., Clover Fort Coal Co., Rex Coal Co., Ellis Knob Coal Co., Crummies Creek Coal Co., Three Point Coal Co., Southern Harlan Coal Co., Wilson Berger Coal Co., Royal Blue Coal Co., Harlan Fuel Co., Perkins Harlan Coal Co., Creech Coal Co., Perry's Fork Coal Co., Utilities Coal Corporation, Wisconsin Steel Co., Harlan Gas Coal Co., Bowling Mining Co. and R. C. Tway Coal Co. Some other scattered mines in eastern Kentucky have advanced wages and the move will force an increase at all mines of the district, in order to keep their labor from drifting.

Following a field meeting of the Pocahontas Operators Association held in Bluefield Nov. 3, W. C. Atwater, president of the association, announced that a substantial wage increase had been granted to all miners and other mine labor in the Pocahontas field. Although no inkling was given as to the amount of the increase it was stated that the wages to be paid would be about on a par with the scale adopted for the Winding Gulf, the Kanawha and northern West Virginia fields. Mr.

Atwater said the advance "will continue with the present market."

The meeting at Bluefield was attended by every member of the association, the entire tonnage of the field being represented, with several operators not members in attendance. It was said to be the first time in the history of the association that there had been a 100-per cent attendance and the first time every operation in the Pocahontas field had assembled for an executive session.

An increase in pay to mine workers in the New River field was granted by the New River Coal Operators' Association at a meeting last week. The 1922 wage scale is the basis for the new rates, which became effective as of Nov. 1. The higher wages will likely remain in force as long as the British coal strike has its present effect on the market. Pick mining is to be paid for at the rate 83c. per ton; machine cutting, 16c. per ton; loading 66c. per ton; motormen and machine runners, \$7.18 per day; tracklayers, \$7.05; blacksmiths, \$7.50; general outside labor, \$6.50 to \$6.65 per day.

Virginia Scale Raised

Announcement of a general wage increase of approximately 30 per cent effective Nov. 1, over the Virginia coal field, has been made at Norton, Va., following a series of informal conferences of coal men. The advance means a payroll increase of approximately \$750,000 a month in the southwest Virginian field. While the increase is not promised as permanent, it was pointed out by one operator that the basis of increase was worked out in such a manner as to make the operators hope it would not be necessary to make further revision, either up or down.

The increase does not apply to straight salary men, each of whom will be dealt with individually. Nearly every mine in southwest Virginia is working full time and production is the highest in history.

Westbound shipments of coal through the canals at Sault Ste. Marie during October, 1926, included 1,376,649 net tons of bituminous and 124,645 tons of anthracite.

Striking British Coal Miners Seem Badly Beaten, Though Many Detours Mark Path to Peace in the Industry

The road to peace in the British mining struggle is still well supplied with detours.

The latest obstruction to a settlement of the strike which started May 2 came Monday night when the executives of the British Miners' Federation, after prolonged negotiations with the representatives of the government, announced that it would be necessary to submit the proposals under discussion to a delegates' conference of the union. This conference will meet in London today.

The proposals in question embody a minimum percentage addition to the basic wage rates under the terms of the 1921 agreement and a division of the net proceeds of the industry between wages and profits varying from 85 to 87 per cent to wages and from 13 to 15 per cent to profits. In the absence of a national agreement, against which the coal owners continue adamant, each coal district must give its guarantee to the Prime Minister that the terms agreed upon will be faithfully carried out.

Apparently the miners' rejection of the Baldwin-Churchill peace program several weeks ago has cost them the national arbitration tribunal to review district agreements included in that plan. No mention of such a tribunal was incorporated in the published statements of the government's terms submitted to mine owners and mine workers over the week-end. The Cabinet also is lending no aid to the struggle of the Miners' Federation to retain the seven-hour day.

Negotiations leading up to the proposals to be considered by the delegates' conference of the British Miners'

Federation are the outcome of the efforts of the mediation committee of the Trades Union Congress General Council, which acted as a liaison body between the miners and the government. A delegates' conference of the Federation which met Nov. 4 approved earlier parleys between the mediation committee and the executives of the miners' union and authorized the further negotiations.

The following day the miners' executives were in conference with the coal committee of the Cabinet and on Saturday a meeting was held with the full Cabinet. The government also called the central committee of the Mining Association into separate conference for the purpose of sounding out the present attitude of the coal owners to a settlement. The colliery proprietors held out against any suggestion that there should be a national tribunal to pass on district agreements. Such an arrangement, they declared, was merely a camouflage for a national agreement.

"There is not the slightest chance of the owners agreeing to any national instrument of settlement with the Miners' Federation which would only place more power in the hands of the executives to call a national strike," asserted one spokesman for the operators at the conclusion of the Saturday meeting. "That is past and the miners know it. Another stumbling block is that the miners are sticking out for a seven-hour day. This, too, is a hopeless proposition and we decline to consider it as a basis upon which negotiations may be resumed."

Although the Federation is in desperate financial straits and upward of 25 per cent of its members already have

Vancouver Coal Shipped To South America

The Str. Hollywood left Union Bay, Vancouver, on Oct. 27 with 2,000 tons of coal consigned to South American ports. This is the largest shipment of coal to foreign ports from Vancouver Island mines since the war. It is understood that the shipment is somewhat of an experiment, and if it proves to be profitable other shipments will follow. The Str. Kommandoren I took a consignment of 6,000 tons of Vancouver Island coal to Siberia in last May, but this was to be used for bunkering whaleboats and, consequently, was not classified as cargo.

returned to work, A. J. Cook, general secretary, was as bitter as ever in denunciation of the owners' terms. "I see no signs of peace in the coal dispute," he declared on Sunday. "The trades union levy [a voluntary appeal asking each union man to contribute a penny per working day to the miners' cause] brings \$250,000 weekly, and we shall win if we have silver bullets. We will not accept the conditions offered us at any price. The negotiations are not a sign of defeat. We are not beaten."

General opinion in other quarters, however, does not coincide with the optimistic outpourings of Mr. Cook. Popular opinion is that the miners have been badly beaten. Aside from the voluntary levy, other unions in Great Britain have persistently and repeatedly refused to extend the Federation aid or co-operation in its desire to curb the handling of imported coal.

Hard-Coal Fields in Korea To Be Developed

Shanghai, China, Oct. 15.—Government circles in Japan have recently given prominence to the economic value of the anthracite fields in Korea, and it is rumored that plans are being made by the Department of the Interior and the Governor General of Korea for a better organized operation of this area, which in time may be of considerable importance to the empire.

Output last year was 350,000 tons, whereas during the year before, when conditions were generally not unfavorable to marketing, the output was only 210,000 tons. According to information received recently from Seoul, the capital of Korea, production has continued to mount this year.

The future importance of this field has caused the government to consider bringing the chief producing companies into an association in order to co-ordinate operations to an extent not practiced at present.

There are now being operated in Korea 130 privately owned fields, and a further 30 undeveloped fields which have been purchased or otherwise reserved can be put into operation when economic conditions warrant the outlay for machinery and other necessary expenses.



Photo by Underwood & Underwood.

Discharging American Coal at Hull

Despite the feverish efforts of "Emperor" Cook, secretary of the British Miners' Federation, to cut off the Empire's coal supply, an increasing volume of fuel imports is coming in to swell the quantity made available for consumption by miners returning to the pits. Judging by the expressions of the workers on the Alexandra dock, Hull, shown above, they are quite willing to unload American shipments.

Says Comeback in Illinois Awaits Flexible Scale

A flexible wage scale for Illinois miners that will bring back the 20,000,000 tons of output a year lost to the state in the last three years is the hope of Stuyvesant Peabody, president of the Peabody Coal Co., Chicago. In a speech prepared for delivery recently before the Midday Luncheon Club of Springfield, Ill., he said "Everything else but that we have to make our industry a very prosperous and helpful one to all the people in the State of Illinois."

"I have lived in the belief that nothing when it does happen is half as bad as we think it is going to be before it happens, and I am looking forward to the day when our great union in this state, which has done so much for the mine workers of the world, will make the final step in partnership with the capital that is trying to operate the mines and will give to Illinois a flexible wage scale."

To Modernize Soviet Mines

Charles E. Stuart, a member of the firm of Stuart, James & Cooke, New York engineers, has been appointed by the Soviet Government to reorganize the Donetz coal mines in accordance with American standards. Mr. Stuart believes that the government will adopt his recommendation that obsolete German and Russian mining equipment be replaced with modern American machinery. Compliance with this plan will involve an ultimate expenditure in the United States of more than \$50,000,000.

Would Dismiss Kalbaugh Case

Examiner Konigsberg, of the Interstate Commerce Commission, has recommended that complaint in Docket 17630, Kalbaugh Coal Co. vs. Atlantic City Railway Co. et al., should be dismissed. This complaint attacked the rates on bituminous coal from the Cumberland-Piedmont region to tidewater and Eastern points, and it is the examiner's opinion that the rates are not unreasonable or otherwise unlawful and that the complaint should be dismissed without prejudice to any different conclusion that may be reached by the more comprehensive record in Docket 15006, now before the Commission.

The International Railway Fuel Association has established an office in the Railway Exchange Building, 80 East Jackson Boulevard, Chicago. This office will be in charge of L. G. Plant, who was recently appointed secretary-treasurer, succeeding J. B. Hutchinson, who held this position with an office in Omaha, Neb. for several years. Periodic meetings of committees will be held throughout the year in Chicago, where the annual convention is held. The next annual convention of the association will be held May 10 to 13.

Penn Central Power Plant Doubles Capacity

The Penn Central Light & Power Company, which serves a large territory in central Pennsylvania with light and power, has just completed an addition to its already large plant at Saxton, Bedford County, on the Raystown branch of the Juniata River. The new addition, which was put into service on Oct. 21, more than doubles the company's capacity at this point.

The Penn Central company's first source of power after acquiring a local light and power company in Altoona was the Warrior Ridge plant in Huntingdon County. Subsequently a plant was erected at Williamsburg, Blair County, along the Little Juniata. As the demand for light and, particularly power for mining operations in the central Pennsylvania district, increased, a larger plant with an initial capacity of 30,000 hp. was erected at Saxton, and put into operation in 1923.

This plant is so located as to be able to obtain an abundance of water for condensing purposes. The company also acquired a large acreage of coal nearby in the Broad Top region, insuring an ample fuel supply for many years. This installation was in operation but a short time when steps were taken to enlarge it and the unit just completed was started. It will add 40,000 hp. to the capacity. Four additional boilers of 1,112 nominal horse power have been installed.

While the plant is operated by steam, much water is necessary for condensing purposes and the company has constructed a dam 790 ft. long on the Raystown branch which flows nearby. This will supply water to the plant's capacity, which will be 110,000 gallons per minute. The plant furnishes power as far east as Lewistown and west to practically all the mining operations in Cambria County, besides supplying light and power in Huntingdon, Blair, Bedford and adjoining counties.

Oil-Burner Explosion Injures Four

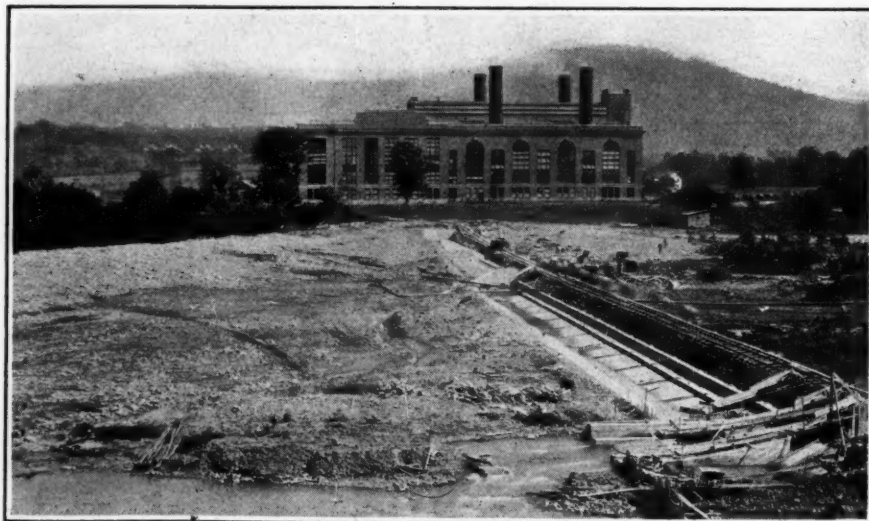
One woman was hurled from her bed, two others were thrown to the floor and an 18-year-old youth was sent to the City Hospital as a result of the explosion of an oil-burning boiler in the basement of an apartment house at Virginia and Atlantic avenues, Atlantic City, N. J., on Nov. 3. The property damage was placed at \$10,000.

The injured youth and another man who lived in the apartment house were re-covering the boiler with asbestos when the explosion occurred. The basement and elevator shaft, which adjoined the boiler room, were wrecked. The blast was attributed to backfire.

Fuel Consumption and Power Output by Utilities Climb

Public-utility power plants in the United States consumed 3,451,589 net tons of coal in September, 1926, according to the U. S. Geological Survey. This compares with 3,458,379 tons used in the preceding month. Fuel-oil consumption by these plants in September totaled 907,727 barrels, against 760,159 barrels in August.

The amount of electricity produced by public-utility power plants in September was the largest ever produced in a single month, notwithstanding September was a 30-day month. Average daily production during the month was 205,600,000 kw.-hr., nearly 4 per cent larger than for August and nearly 3 per cent larger than the average daily output in February, the next highest average daily rate. Production of electricity by the use of water power continues to increase from the low output in July, due to the continued improvement in the water supply of power streams.



**New Power Plant of Penn Central Company
Recently Opened at Saxton, Pa.**

This recent addition more than doubles the company's capacity at this point. Located in Bedford County, Pennsylvania, the plant furnishes power as far east as Lewistown and west to practically all the mining operations in Cambria County, besides supplying light and power in Huntingdon, Blair, Bedford and adjoining counties.

Return of Laborites to Parliament And Dole System May Prolong Strike In Great Britain Is Washington View

By Paul Wooton
Washington Correspondent of Coal Age

With the East producing coal at a rate never before equalled and with the activity of the market reflected in rising wage rates, it has become more important than ever to understand the state of affairs in the United Kingdom. Export demand is the keystone of the present situation, but it is not the whole arch. There is an element of consumer-anxiety present in this country, even though it may not have reached the stage of a buyers' panic. Certainly a large amount of coal is flowing into storage.

Were the export demand to stop suddenly, now that the Lake trade is nearly over, it would produce a great reaction, but none of the predictions of the collapse of the strike has materialized. There is a tendency now to believe it will drag on until after Christmas. The by-election for Parliament has resulted in the defeat of many Conservative candidates and the return of Labor members. The striking mine workers believe this indicates that public sentiment is forsaking the Baldwin government and has stiffened their resistance. The men can stay out for some time yet, many believe. This is made possible by the public funds which are dispensed to those in need.

Curb Abuse of Public Funds

The origin of this system goes back more than a century. There was a time when the so-called poor laws were badly administered. The point was reached where many preferred the grants of relief to the wages they could obtain. In an effort to correct notorious abuses Parliament a century ago passed an act cutting down the amounts which may be granted by local authorities and prescribing conditions under which aid may be given. As a concession to the poor this act contained a provision making it mandatory on the local authorities to take care of any destitute person who presented himself. The local authorities had the right to compel the applicant to work, but any man or woman could claim some relief as a right.

Under the provisions of this system enormous sums in the aggregate have been granted to the families of the striking miners. The Minister of Health, who has some remote authority over the poor-law guardians, has sug-

gested as fair disbursements 12s. per week for mothers and 4s. per week for each child. In some instances much larger amounts have been disbursed, particularly in the communities where the miners are in political control. No money is given the striking workman, but aid to the women and children is a material aid to him. Observers in England estimate that £18,000,000 of this indirect relief will have been furnished the miners by the end of November. To this, of course, must be added the money received from Russia and labor organization in other countries, but the total amount of these latter contributions is small in comparison with the amounts furnished through official channels.

Heavy Allowance for Relief

In comparison with the amounts made available for relief during strikes in this country, £18,000,000 (more than \$86,000,000) seems fabulous. General strikes and suspensions have been conducted by the United Mine Workers without any relief for the rank and file. The most the American union has been able to do has been to pay strike benefits in the outlying local districts to hold them in line.

These facts as to the British situation must be kept in mind in making any forecast of the length of time the export demand may continue.

Markle Gift to Mission Upsets Campaigners

John Markle, anthracite operator, almost ruined a promising drive for funds and friends by the McAuley Mission, New York City, on Nov. 8 by subscribing the whole amount sought practically before the campaign got under way. Trustees of the Mission needed \$100,000 to build a new dormitory for down-and-outers, and expected a long and arduous campaign for the money, though it was hoped that 20,000 new friends would be gained for the cause.

Officers of the Mission pleaded with Mr. Markle to reduce his contribution, but he wouldn't give a cent under \$100,000. He didn't care what the Mission used the money for, as long as it went for a good purpose, but it must take the whole sum. Henry Fletcher, president of the Mission, finally announced a scheme whereby \$60,000 of Mr. Markle's donation would go for the new building and \$40,000 for endowment, leaving \$40,000 to be raised for the dormitory. This was agreeable to Mr. Markle, so the campaign is to continue.

New Orient Again Sets Mark for Day's Hoisting

New Orient mine of the Chicago, Wilmington & Franklin Coal Co., at West Frankfort, Ill., eclipsed all previous marks for hoisting coal in one day on Nov. 3 with an output of 13,563 tons. This exceeds by nearly 1,000 tons the previous world's record of 12,825 tons, set by the same mine several months ago.

In establishing the new mark 2,624 mine cars were loaded on the bottom, 1,175 skips were necessary and 266 railroad cars were required to haul the coal from the mine. No special preparations were made to set a new record, as is evidenced by the fact that 12,025 tons was hoisted on the day before the new mark was made and 11,743 tons the day after.

Daily Rate of Coke Output Climbs in September

Production of byproduct coke in the United States during September totaled 3,641,000 net tons, a decrease of 107,000 tons, or 2.9 per cent when compared with the August output of 3,749,000 tons. September was a 30-day month, however, and the daily rate increased from 120,930 tons to 121,379 tons, or 0.4 per cent. There were 75 active plants, the same number as in July and August, and these produced a little more than 90 per cent of capacity.

The output of beehive coke during September showed a gain of 558,000 tons, or 74.2 per cent when compared with the preceding month, and was the highest monthly total since February.

Output of byproduct and beehive coke combined was 4,951,000 tons, the byproduct plants contributing 74 per cent, and the beehive plants 26 per cent.

Output of Byproduct and Beehive Coke in the United States*

(In thousands of net tons)			
	Byproducts	Beehive	Total
1923 monthly average	3,133	1,615	4,748,000
1924 monthly average	2,833	806	3,639,000
1925 monthly average	3,326	946	4,272,000
June, 1926.....	3,610	811	4,421,000
July, 1926.....	3,756	963	4,719,000
August, 1926.....	3,749	752	4,501,000
September, 1926....	3,641	1,310	4,951,000

*Excludes screenings and breeze.

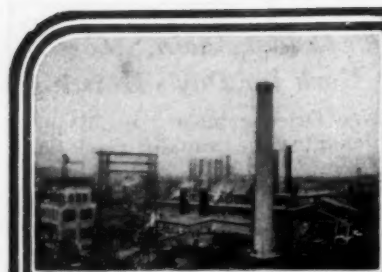
The total quantity of coal consumed at coke plants during September was about 7,298,000 tons, of which 5,232,000 tons was consumed in byproduct ovens and 2,066,000 tons in beehive ovens.

Estimated Monthly Consumption of Coal in Manufacture of Coke

(In thousands of net tons)			
	Consumed in By-product Ovens	Consumed in Beehive Ovens	Total Coal Consumed
1923 monthly average	4,523	2,507	7,030
1924 monthly average	4,060	1,272	5,332
1925 monthly average	4,759*	1,452*	6,211*
June, 1926.....	5,186	1,279	6,465
July, 1926.....	5,396	1,519	6,915
August, 1926.....	5,386	1,188	6,574
September, 1926....	5,232	2,066	7,298

*Revised since last report.

EDITOR'S NOTE—The foregoing Washington letter reflects certain views of official Washington. Due to the fact that policy as a rule prevents government officials from permitting their views being quoted directly, the authority for these reports is necessarily somewhat vaguely referred to. The views reflected are not those of any one group of officials, but of different men, in the legislative and executive departments. There is no necessary connection between their views and COAL AGE editorial policy; neither do they necessarily represent Mr. Wooton's personal views. It is felt that the opinions thus faithfully reflected will be of great interest to the industry. Where opinions are cited from sources outside of the government, the source will be specifically stated.



News Items From Field and Trade



COLORADO

P. M. Peltier and John Connell, who have been engaged in the coal mining business in this state for the past thirty years and who recently disposed of their Bear River coal property, in Routt County, which was sold for \$375,000, have organized a new coal company under the name of Keystone Coal Mining Co. with headquarters at Denver. The mine is located at Oak Creek, in Routt County, and is served by the Denver & Salt Lake R.R. They recently constructed a mine track over 800 ft. long and have set aside approximately \$75,000 for tipples and machinery improvements. They will work the Pinacle seam.

ILLINOIS

Old Ben Expands Operations.—After a suspension of almost nine months, Old Ben Coal Co.'s mine No. 9, at West Frankfort, is about to resume operations. Normal production of 5,000 tons daily will be reached soon, mine officials say. Renewed activity at this mine will bring the first work that many of the 750 men employed there have had since the mine suspended operations on Feb. 6, 1926. Old Ben Mine No. 18, at Johnston City, also has resumed operations after a long suspension.

Centralia Mine to Reopen.—Bell & Zoller mine No. 5, at Centralia, which has been idle for the last three years and a half, is being cleaned up preparatory to resuming operations. The mine originally worked 750 men, but the number to be employed upon resumption has not been disclosed.

The following meetings will be held this month by the State Miners' Examining Board: Nov. 11, Herrin; Nov. 12, Marion; Nov. 12, Harrisburg; Nov. 15, Staunton; Nov. 16, Springfield; Nov. 17, Taylorville; Nov. 18, Danville; Nov. 19, Canton; Nov. 20, Peoria.

Heenanville Company Sold.—The business of the Heenanville Coal Co., recently operated by the Roberts family, has been sold to a group of men from Kangley. The mine is located northwest of Streator. The Heenanville shaft is one of the oldest producing mines in northern Illinois.

Mining activities in the Harrisburg field were increased last week with the resumption of operations by No. 1 mine of the Wasson Coal Co.

The Silver Creek mine, at Farmington, has resumed operations.

A group of four men from Springfield have leased the coal mine at Edinburg, and work will be resumed. This

mine has been closed since Nov. 21, 1923. H. T. Young will be the new mine superintendent.

G. P. Brasmer & Sons, who operate a coal mine on the DeBlock farm near Viola, are ready to start sinking another shaft near the old one and will operate both of them this winter.

INDIANA

Official tabulations for nomination of officers for district No. 11, United Mine Workers, comprising the Indiana field, reveal that Harvey Cartwright, vice-president of the district, received the vote of 47 locals for president. Tyler G. Lawton, present incumbent, received the vote of only four locals. William Mitch, district secretary-treasurer, received the vote of 76 locals for renomination. He also received the larger number of nominations in the list of delegates to the Indiana State Federation of Labor.

New switches have been laid to the mine of the Korff Coal Co. near Boonville, in Warrick County, from the Evansville Suburban and Newburgh Ry. The Korff mine also has switches leading to the Southern Ry., a short distance away.

The Black Hawk coal mine, at Black Hawk, Vigo County, has resumed operations after being closed down for several months. Four hundred men are employed. The mine, which is owned by the Black Hawk Mining Co., is one of the largest in the southern Indiana field.

The United Electric Coal Cos., largest strip operator in the Middle West, is about to open another operation near West Clinton, in Vermilion County. Present plans call for shipments of coal from the operation on Dec. 15 next. The mine will have a capacity of 60,000 tons per month.

KENTUCKY

The property of the Mine Run Coal Co. was ordered sold by court order at Harlan on Nov. 1 to satisfy a judgment in favor of Senator H. M. Brock for \$6,647.57, representing a commission of 8 per cent on sales of coal which Brock claimed to have obtained in an agreement with the company in 1924. Senator Brock was president of the company and J. W. Petrey general manager and Marvin Petrey secretary. Indications are that the case will be carried to a higher court, in view of the fact that no written contract or agreement was produced regarding the alleged commission and in view of the fact that

Brock, as an officer of the company, could be approached on such a matter without any financial consideration.

Southland Mines Raise Pay.—N. E. Jones, superintendent of the Southland coal mines at Henderson, has announced a raise of 11 per cent in wages to all of his 275 men employees. The day scale has been increased from \$3.60 to \$4 and loaders now receive 50c. a ton instead of 45c.

Judge A. M. J. Cochran of the U. S. District Court of Eastern Kentucky appointed M. M. Durett of Covington as receiver for the Kentucky Fuel Co., with offices in the Union Central Building, Cincinnati, and mines in Clay and Perry Counties, Kentucky. He takes the place of D. J. Hendershott, under whose direction the receivership has been operated for several months.

MINNESOTA

Expect Record Coke Output.—Officials of the Zenith Furnace Co. at Duluth expect to set new high records in domestic coke distribution during the fall and winter season. The oven capacity of the company's plant has been enlarged since a serious fire crippled it last winter.

MISSOURI

The St. Louis Chamber of Commerce has received an invitation from Thomas A. Baker of the Carnegie Institute of Technology to send a representative to the conference on bituminous coal to be held at Carnegie Tech Nov. 15 to 18.

OHIO

Mines Resume Steadily.—With demand for all grades of coal exceedingly strong, the number of active mines in all Ohio fields is steadily increasing. The Elk mine, near Roseville, which had been idle for about two years, was started Nov. 1, giving employment to about 100 men. Mine No. 210 of the Ohio Collieries Co., just north of Athens, also resumed recently, giving work to 350 miners. This mine had not been operated for almost a year. The two mines of the Essex Coal Co., in the Nelsonville field, which had been inactive for approximately two years, were started Nov. 1 with an output of approximately 3,000 tons daily. All of the Essex company's Ohio mines are now in operation, as two are running in the Pomeroy field. Mines Nos. 4 and 6 of the Rail & River Coal Co., at Stewart and McClainsville, in Belmont County, also started up last week. Mine No. 1 of the same company, located in South

Bellaire, probably will be started soon, officials of the company announce. All of these mines have been idle since April, 1925.

Two new wholesale offices have been opened in Cincinnati. David Rutter & Co., of Chicago, have opened a branch in the Fred. Schmidt Building, with B. Lee Hutchinson and Clyde Palmer in charge, and the Rader Coal Co., of Indianapolis, has taken offices in the First National Bank Building.

To Consolidate Offices.—The Pittsburgh Coal Co.'s Columbus (Ohio) office will be consolidated with the main office in Pittsburgh at an early date, according to an official announcement. A district office will be maintained at Columbus, however. W. K. Field, president of the company, has maintained his home in Columbus, although for several years his chief office has been in Pittsburgh.

PENNSYLVANIA

Two More Mines to Reopen.—The increase in wages granted by the Pittsburgh Coal Co., putting its scale above the Jacksonville rates, is responsible for a 25-per cent increase in the number of miners employed by the company. The company is now preparing to reopen two more mines. They are Montour No. 4, on the Montour R.R., and Arnold No. 2, at Arnold City, on the Pittsburgh & Lake Erie. The company announced that production in October by its Pittsburgh district open-shop mines was 307,905 tons, exceeding all previous monthly records since the mines were reopened independent of the union.

The Cosgrove-Meehan Coal Corporation's earnings for the nine months ended Sept. 30, after all charges, amounted to \$165,588, equivalent to 61c. per share on the corporation's common stock. Earnings for the corresponding period of 1925 amounted to \$32,356. Coal sales for the nine months of 1926 increased 53 per cent over coal sales for the same period in 1925.

Hard-Coal Mine Blast Kills Nine.—Nine miners were killed in an explosion Oct. 30 in the No. 7 colliery of the Susquehanna Collieries Co., at Nanticoke. Six others narrowly escaped; they were about to enter the mine when the explosion occurred. Blackdamp and cave-ins following the blast impeded the work of rescuing the bodies of the victims. Officials of the company were unaware of the cause of the explosion.

UTAH

Coal Taxes Vary Widely.—Taxes on Utah coal in 1925 averaged 6.8c. per ton mined, representing the properties taxed as well as the impost on machinery and improvements, according to a report of the State Board of Equalization. The Board said that in the last few years the assessments on coal properties in Carbon County have dropped from \$10,180,681 to \$8,325,667. A wide range in rate per ton is noticed as between individual companies, depending upon the extent of the holdings in relation to the output. Some of the

companies having relatively small holdings that were worked extensively paid as low as 2c. per ton mined, while others having large holdings and operating on a relatively small scale paid taxes as high as 18.8c. per ton mined. This figure was the highest of any paid in the county, the report shows.

At a luncheon meeting of Utah coal operators held in Salt Lake City recently it was voted to join the National Coal Association at once and later organize a local association. Harry L. Gandy, executive secretary of the National association, addressed the meeting.

WEST VIRGINIA

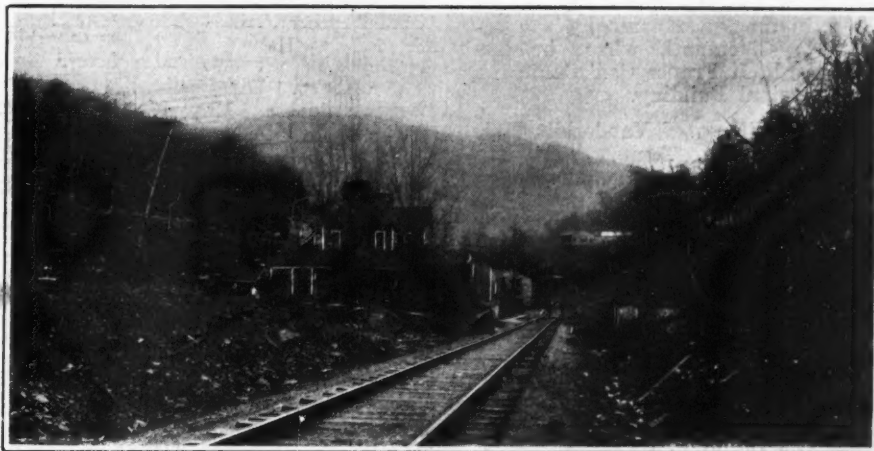
The U. S. Circuit Court of Appeals at Richmond, Va., has affirmed the decision of the U. S. District Court for southern West Virginia in the case of the White Coal Co. vs. the United States. The case when first tried resulted in a verdict of about \$990,000 for the plaintiff, a finding which was reversed by the appeal court. On the

shape to handle the increased output," said Charles E. Krebs, engineer for the company, late last week. Mr. Krebs came to New York from the company's new development in West Virginia to confer with the syndicate financing the operation.

CANADA

The Eastern Trust Co., trustee for the bond and debenture holders of the Nova Scotia Steel & Coal Co., a subsidiary of the British Empire Steel Corporation, have appealed from the judgment of Justice Carroll in which an application for the appointment of a receiver and manager for the company was dismissed. The case will be heard at the sitting of the full court, which opens Nov. 16.

Alberta Shipments in Abeyance.—At a conference of coal operators and government officials held at Edmonton, Alta., on Oct. 31, it was decided to make no further experimental shipments of Alberta coal to Ontario at the \$9 rate. The whole question of



Plant of the Mingo Coal & Coke Co.

This mine was opened in 1887 and is the oldest in the Mingo or Mason seam. The location is in the Middlesboro (Ky.) section of the Southern Appalachian field. The mine rating is 400 tons per day but for some time production has been intermittent.

second hearing the government won its case and it was again appealed, being argued last June. The coal company instituted its action under the Lever Act to recover the difference between the price paid for coal commandeered by the government and the market price prevailing at the time.

The National Coal Mining Co., of Pittsburgh, has sold to the Corwin Coal Mining Co., of Clarksburg, a new company, the Polar mining property at McWhorter.

It has been announced that the Madeira-Hill-Clark Coal Co., operating near Wilsonburg in Harrison County, has resumed operations. The company's plants had been idle since May, 1924. The mine will be operated under the Baltimore wage contract.

During September the Island Creek Coal Co. hung up a new production record of 600,000 tons. In the nine months just preceding October the company produced 4,748,579 tons.

"The Guardian Coal & Oil Co. will work double shifts on production as soon as the shipping facilities are in

coal rates is now before the Board of Railway Commissioners, and the conference concluded that it would not be fair to the government, the coal operators, or the Railway Board to make additional experimental shipments until costs had been determined and a report brought in.

Increase Shifts at Coalmont.—The Coalmont Collieries, in British Columbia, which had been operating its mine on two and its aerial tramway on one shift, has put a third shift on at the mine and a second one at the tramway. The company reports that it has orders on hand that will guarantee the operation of the colliery at capacity until spring. The coal is finding favor in Vancouver and some of it finds its way to Victoria, where it appears able to compete with the coals from the Vancouver Island mines.

The Provincial Department of Mines has announced that the coal output of British Columbia during the first nine months of this year was 1,658,878 gross tons, as compared with 1,777,965 in the corresponding period of 1925.

Among the Coal Men

Meyers Y. Cooper, who until four weeks or so ago was one of the heavy stockholders of the Midland Coal Mining Co., operating in Kentucky, and the Midland Coal Sales Co., operating in Cincinnati, was defeated Nov. 2 as the Republican candidate for Governor of Ohio. Some time after releasing himself from his coal connections Mr. Cooper told the miners of the Hocking Valley what he intended doing with the coal question were he elected. He also decreed that Ohio institutions would burn Ohio coal. These are the two pet tunes of the present Governor, A. Vic Donahey, and seemed a little strange from Cooper.

R. L. France, who has been engaged in mining coal from the Domino Coal Co. through the Tuttle Coal Co., Puritan-Tuttle Coal Co. and the Domino Coal Co. of Chicago, has sold out his interest in the latter company and returned to Cincinnati, where he has opened the R. L. France Coal Co. in the Dixie Terminal Building.

Dr. L. C. Glenn, of Vanderbilt University, Nashville, Tenn., spent two months this summer completing a general reconnaissance of the West Kentucky coal field for a report to be published by the Kentucky Geological Survey.

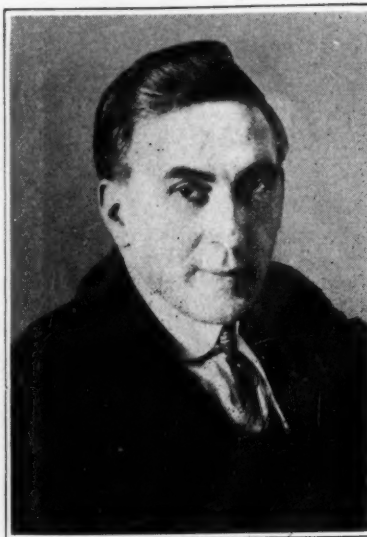
J. E. Hibline, who has represented the Quemahoning Coal Co. in Baltimore for the last thirteen years, recently severed his connection with that company. He has now established a general coal brokerage business at 714 Continental Building, Baltimore, Md.

C. W. Logan, Louisville, formerly with the Dixie Fuel Co. and later manager of the Louisville office of the Nashville Coal Co., Nashville, Tenn., who left the latter concern on Oct. 1, has established an office at 395 Starks Building, Louisville, as a mine agent. Mr. Logan is now representing the Monro Warrior Coal & Coke Co., of Birmingham, and the Kearns Coal Co., of Cincinnati.

H. J. Bryson, of the State Department of Conservation and Development, has been appointed by Governor Angus McLean as a delegate to represent North Carolina at the international conference on bituminous coal to be held at the Carnegie Institute of Technology, Pittsburgh, Pa., Nov. 15 to 18.

E. D. Clark has been appointed assistant superintendent of the Flat Creek Division of the Alabama By-Products Corporation. Mr. Clark was formerly superintendent of the Mulga operations of the Woodward Iron Co. Mr. Herd was transferred from the Dolomite mine of the Woodward company to fill the place vacated by Mr. Clark.

The Chicago, Rock Island & Pacific Railway Co. announces that J. C. Gutsch and F. A. Adams have been promoted to the position of assistant freight traffic manager, effective Nov. 1.



Keystone View Co.

Representative Meyer Jacobstein

Representative Meyer Jacobstein, Democrat, of Rochester, N. Y., was re-elected on Nov. 2 to represent the thirty-eighth Congressional district in Congress. His plurality over his Republican opponent, James E. Cuff, was approximately 2,000. Mr. Jacobstein was an important witness at the hearing in the House last spring on proposed coal legislation.

Traffic News

Oral Argument in Hard-Coal Rate Case on Dec. 16

Oral arguments in Docket 15006, commonly known as the *Anthracite Rate Investigation*, will be held by the Interstate Commerce Commission before the full Commission in Washington, Dec. 16. Arguments will be heard at the same time in Docket 16555, Amos Coal Co. case, and also I. & S. Docket 2637, both of which are in a measure related to the hard-coal rate case.

Attacks Southwest Rates

The Tulloch Coal Co., of Topeka, Kan., in a complaint against the Atchison, Topeka & Santa Fe R.R., Docket 18853, attacks coal rates from mines in Arkansas and Oklahoma to Topeka and Lawrence, Kan., as unreasonable. Just and reasonable rates for the future are asked.

Suspends Rate Reduction

Tariffs reducing rates on bituminous coal from eastern Kentucky and eastern Tennessee mines to Atlanta, Ga., and intermediate points have been suspended until March 1, 1927, by the Interstate Commerce Commission. The tariffs affected by the Commission's

order in I. & S. Docket No. 2787 are: Louisville & Nashville R.R. supplements 19 to I. C. C. No. A-15409, 11 to I. C. C. No. A-15622 and 1 to I. C. C. No. A-15774 and supplement 30 to Nashville, Chattanooga & St. Louis I. C. C. No. 2882-A. The suspended tariffs cut the rates to Atlanta 15c. per net ton. A hearing will be held at Washington on Nov. 15 before Examiner Konigsberg.

Refuses Old Coke Rates

The "emergency basis" of coke rates from the Birmingham district to Northern points, first filed last winter, has been re-established by the Louisville & Nashville R.R. and connections in tariffs to become effective Nov. 22, 1926, and expire Dec. 31, 1927. Rates to Michigan points are made 75c. and \$1 per ton over Chattanooga via Cincinnati and Louisville.

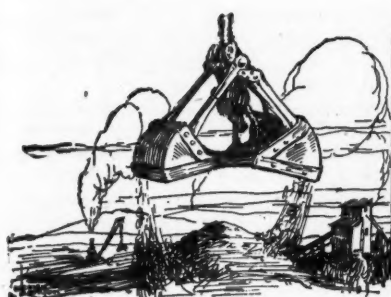
These differentials are the same as those carried in the emergency rates which expired April 30. Subsequent efforts to effect an understanding between Southern carriers and ovens and Northern railroads and coke men were futile.

The Salt Lake & Utah Ry. has requested the Utah Public Utilities Commission to grant a hearing on matters involving the division of through freight rates on coal from Utah mines tapped by its lines. It is stated that most of this coal output is shipped over the Utah Ry. to Provo, thence over the applicant company's line, thence on the Bamberger Electric Railroad Co.'s line, and finally over the electric line of the Utah-Idaho Central R.R. Co. to northern Utah and southern Idaho points. The complaining company holds that the amount received as its share of the money paid for transporting the coal to its final destination is too low and is inequitable.

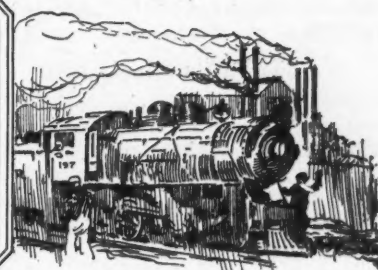
The Board of Railroad Commissioners of South Dakota has effected sharp reductions in freight charges on lignite to many points within the state. The reductions are from 35 to 45 per cent. From Isabel, S. D., to Pierre the rate is cut from \$4.18 to \$2.31; from Isabel to Huron, from \$2.74 to \$2.07; from Isabel to Watertown, from \$3.86 to \$2.07; from Isabel to Salem, from \$3.34 to \$2.19.

Association Activities

The Columbus (Ohio) Retail Coal Dealers' Association held a get-together at the Neil House, Columbus, Oct. 28. Ford R. Cate, executive vice-president of the Detroit Coal Exchange, who was the principal speaker, gave some valuable pointers on organization work, principally in handling credits, and brought home the message that in organization only can the retailers hope to accomplish anything toward prosperity. The membership of the association is now 55 and is rapidly growing. Headquarters are maintained in the Columbus Chamber of Commerce Building, where a credit bureau is operated.



Production And the Market



Runaway Market Spreads to Illinois and Indiana In Face of Record-Breaking Output

The sweep of the runaway market in bituminous coal definitely caught Illinois and Indiana last week. This expansion, coupled with growing transportation difficulties, increasing pier congestion and feverish bidding by buyers unprepared for the turn in affairs, offset the weaker tone in the Pittsburgh district and the uneasiness manifested in the New York tidewater trade at the reports that the British mining dispute was on the verge of settlement. The practical disappearance of surplus labor, and wage advances in non-union fields also were factors in checking recessions.

Coal Age Index of spot bituminous prices on Nov. 8 was 299 and the corresponding weighted average price was \$3.61. This was an increase of 14 points and 16c. over the figures on Nov. 1. Compared with the rate of advance registered during the last half of October, this increase shows a slowing down. This may be attributed to the uncertainty which grips seller as well as buyer. Much will depend in the next few days upon the outcome of the British strike negotiations; should they fail, further sharp increases appear almost inevitable.

Production Breaks Records

Although the British situation has been the exciting cause in the upward movement of American spot quotations, the most significant thing in the present market set-up is the fact that higher prices persist in the face of continued expansion in production. During the week ended Oct. 30 the total bituminous output was estimated by the U. S. Bureau of Mines at 13,430,000 net

tons—the highest weekly output ever recorded in the history of the industry. Religious holidays and elections cut into working time the forepart of the last week, but it seems probable, from the data available at this writing, that the week's total will be well over the 12,000,000-ton mark.

Cumulative production of soft coal to Oct. 30 was 460,842,000 tons, as compared with 460,673,000 tons during the corresponding period in 1920 and 474,975,000 tons in 1923. Unless there should be some unexpected upsets between now and the end of the year, total output for 1926 should closely approximate the tentative estimate of 575,000,000 tons made by the railroads some weeks ago. To reach that total, which would place the present year second to 1918, a nice adjustment between mining and transportation will be necessary. The transportation plant now is working close to capacity and its margin of reserve facilities has been practically exhausted.

Seek to Build Up Stocks

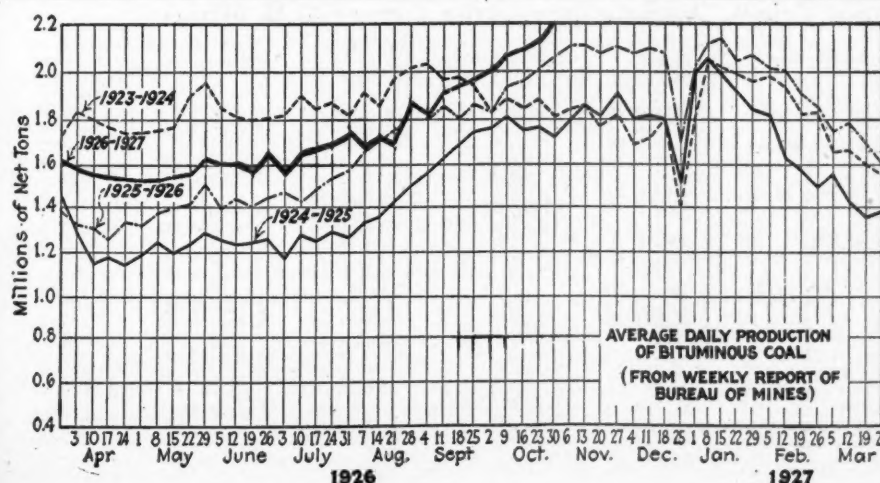
Government and unofficial compilations indicate that there has been a modest increase in the quantity of coal put in storage by large industrial consumers. But these same figures and current reports from various market centers also show that many sections, particularly industrial communities lying close to the mines, have been living on a hand-to-mouth basis. These consumers have awakened to the fact that coal is moving by their doors to distant buyers. As a result they, too, are rushing into the market as active bidders for spot tonnage.

Unusual movements, reminiscent of the wild days of 1916-17, again are adding to the complications of current distribution. Tidewater and the lakes have been magnets drawing coal from Pennsylvania, West Virginia and eastern Kentucky. In some cases the attraction to seaboard has been so strong that vacuums in other consuming areas have been created. Western Kentucky is selling in Cincinnati, Illinois is penetrating further into Michigan and shipping some coal to Canada. Some of the overflow of water-borne export trade has brightened the life of producers in Illinois and Alabama and many operators in central Pennsylvania now look upon overseas shipments as normal.

Anthracite Trade Steady

The movement of domestic anthracite reveals little that is exciting, but the volume of that movement compensates for the loss of headline features. Prices are well maintained. Production, which has been over the 2,000,000-ton mark for some time, dropped to 1,805,000 tons during the week ended Oct. 30 because of the holiday observance of Mitchell Day. The steam situation the past week was marked by greater strength in the demand for No. 1 buckwheat.

Lake trade in anthracite picked up during the last two weeks in October, when dumpings of 96,418 and 99,528 tons brought the total for the season to 2,513,602 net tons. During the week ended Nov. 4 dumpings at Buffalo totaled 54,300 tons. Bituminous dumpings at the lower lake ports the week ended Nov. 7 were 745,463 tons of cargo and 41,064 tons of vessel fuel, making



Estimates of Production

(Net Tons)

BITUMINOUS

	1925	1926
Oct. 16.....	11,770,000	12,386,000
Oct. 23 (a).....	12,088,000	12,712,000
Oct. 30 (b).....	12,485,000	13,430,000
Daily average.....	2,081,000	2,238,000
Cal. yr. to date..... (c)	417,232,000	460,842,000
Daily av. to date..... (c)	1,626,000	1,795,000

ANTHRACITE

Oct. 16.....	17,000	2,093,000
Oct. 23 (a).....	13,000	2,062,000
Oct. 30.....	19,000	1,805,000
Cal. yr. to date..... (c)	61,331,000	70,026,000

BEEHIVE COKE

Oct. 23 (a).....	224,000	200,000
Oct. 30 (b).....	261,000	197,000
Cal. yr. to date..... (c)	8,151,000	9,848,000

(a) Revised since last report. (b) Subject to revision. (c) Adjusted to equalize number of days in the two years.

the season's total to date 26,583,037 tons, as compared with 24,865,540 tons in 1925.

Boom Hits Middle West

Boom demand hit the Middle West last week, carrying prepared sizes and screenings to higher levels. The \$3.50 basis on lump and 6x3 egg established Nov. 1 by Franklin County was withdrawn under an avalanche of orders and quotations shot to \$4. Other Illinois and Indiana producers took their cue from the southern Illinois group and withdrew all quotations, making sales subject to price current at time of shipment.

Steam coal was not far behind domestic in demand. Choice southern Illinois screenings jumped last week to \$1.60@2. Indiana coal advanced from \$1.15@1.25 to \$1.50@1.75. Operators with any surplus production found it easy to dispose of that tonnage in western Michigan and western Indiana. Railroad buying also is on the increase;

in some cases the carriers have doubled their quotas and a number of new orders have been placed.

Chicago bought sparingly of spot Eastern coals last week because the prices were far above what local factors were willing to pay. Most of the movement of West Virginia and Kentucky coal into this market at the present time is on a contract basis. Shipments of smokeless have been reduced materially. Prices on coke are up and there are rumors that hard-coal quotations will soon be boosted.

"No Bills" Disappearing

In the mining fields of Illinois and Indiana more optimism prevails than has been the case for a long time. Definite announcement of the placement of orders for 65,000 tons of southern Illinois coal for export and reports that between 50,000 and 75,000 tons additional also will move to the Gulf for foreign trade caused a general buying flurry which cleaned up the "no bills"

at prices satisfactory to the producers. Working time, running between four and five days, is limited only by the transportation situation.

Mines in the Duquoin and Jackson County districts are sold up for several weeks. As in southern Illinois, car supply is the only limiting factor in production in the Mt. Olive sector. Some coal is moving from this district into northern Michigan and through the Detroit gateway to Canada at \$3@ \$3.50 for domestic sizes. The Standard field is enjoying better prices and a wider demand than at any time in over two years. Screenings are up 25c.; quotations on intermediate sizes are stronger and 6-in. lump is selling at \$2.50@3.

The St. Louis local trade is more active. Procrastinating consumers are swarming into the market with orders for southern Illinois, Mt. Olive and Standard. For the time being western Kentucky is in an eclipse and there is little call for smokeless or anthracite.

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern					Midwest					South and Southwest				
Market	Nov. 9	Oct. 25	Nov. 1	Nov. 8	Market	Nov. 9	Oct. 25	Nov. 1	Nov. 8	Market	Nov. 9	Oct. 25	Nov. 1	Nov. 8
Quoted	1925	1926	1926	1926†	Quoted	1925	1926	1926	1926†	Quoted	1925	1926	1926	1926†
Smokeless lump.....	Columbus...	\$5.25	\$5.75	\$5.75	\$5.25@5.75	Franklin, Ill. lump.....	Chicago.....	\$3.25	\$3.25	\$3.50	\$4.00			
Smokeless mine run.....	Columbus...	2.35	3.85	4.25	4.00@4.50	Franklin, Ill. mine run.....	Chicago.....	2.35	2.40	2.40	2.35@2.50			
Smokeless screenings.....	Columbus...	2.05	2.60	2.75	2.50@3.00	Franklin, Ill. screenings.....	Chicago.....	1.60	1.50	1.70	1.75@2.00			
Smokeless lump.....	Chicago.....	6.25	5.50	5.50	5.25@5.75	Central, Ill. lump.....	Chicago.....	2.85	2.85	2.85	3.25@3.75			
Smokeless mine run.....	Chicago.....	2.50	3.35	3.75	3.50@4.00	Central, Ill. mine run.....	Chicago.....	2.20	2.20	2.20	2.15@2.25			
Smokeless lump.....	Cincinnati.....	5.50	5.50	5.60	5.00@6.00	Central, Ill. screenings.....	Chicago.....	1.55	1.45	1.45	1.60@1.85			
Smokeless mine run.....	Cincinnati.....	2.55	3.25	3.50	3.50@4.00	Ind. 4th Vein lump.....	Chicago.....	3.10	3.05	3.25	4.00			
Smokeless screenings.....	Cincinnati.....	2.00	2.60	3.00	3.00@3.50	Ind. 4th Vein mine run.....	Chicago.....	2.35	2.25	2.25	2.15@2.35			
Smokeless mine run.....	Boston.....	4.95	7.35	9.75	9.50@10.50	Ind. 4th Vein screenings.....	Chicago.....	1.80	1.50	1.60	1.75@2.00			
Clearfield mine run.....	Boston.....	2.10	3.85	3.85	3.60@4.25	Ind. 5th Vein lump.....	Chicago.....	2.35	2.65	2.65	3.50			
Cambria mine run.....	Boston.....	2.40	4.10	4.50	4.00@4.60	Ind. 5th Vein mine run.....	Chicago.....	1.95	2.00	2.00	1.90@2.10			
Somerset mine run.....	Boston.....	2.20	4.10	4.10	3.75@4.25	Ind. 5th Vein screenings.....	Chicago.....	1.40	1.35	1.35	1.50@1.75			
Pool 1 (Navy Standard).....	New York.....	2.85	3.50	4.60	4.50@4.75	Mt. Olive lump.....	St. Louis.....	2.85	2.60	2.60	2.75@3.00			
Pool 1 (Navy Standard).....	Philadelphia.....	2.95	3.35	4.25	4.40@4.65	Mt. Olive mine run.....	St. Louis.....	2.00	2.25	2.25	2.75			
Pool 1 (Navy Standard).....	Baltimore.....	2.15	3.00	4.10	4.50@4.75	Mt. Olive screenings.....	St. Louis.....	1.75	1.25	1.25	1.50			
Pool 9 (Super. Low Vol.).....	New York.....	2.25	3.30	4.35	4.25@4.50	Standard lump.....	St. Louis.....	2.25	2.15	2.35	2.50@2.75			
Pool 9 (Super. Low Vol.).....	Philadelphia.....	2.30	3.10	4.20	4.35@4.60	Standard mine run.....	St. Louis.....	1.80	1.80	1.80	2.00			
Pool 9 (Super. Low Vol.).....	Baltimore.....	1.95	2.75	3.85	4.00@4.50	Standard screenings.....	St. Louis.....	1.15	1.05	.85	1.10@1.25			
Pool 10 (H.Gr. Low Vol.).....	New York.....	2.00	3.15	4.00	3.75@4.25	West Ky. block.....	Louisville.....	2.10	2.40	2.65	3.50@4.00			
Pool 10 (H.Gr. Low Vol.).....	Philadelphia.....	2.05	2.85	4.10	4.25@4.50	West Ky. mine run.....	Louisville.....	1.35	1.30	1.40	1.75@2.25			
Pool 10 (H.Gr. Low Vol.).....	Baltimore.....	1.80	2.60	3.55	3.75@4.00	West Ky. screenings.....	Louisville.....	.80	.95	1.00	1.40@2.00			
Pool 11 (Low Vol.).....	New York.....	1.65	2.60	3.80	3.75@4.00	West Ky. block.....	Chicago.....	2.35	2.10	2.75	4.00			
Pool 11 (Low Vol.).....	Philadelphia.....	1.90	2.40	3.40	3.60@3.75	West Ky. mine run.....	Chicago.....	1.25	1.15	1.40	2.00@2.50			
Pool 11 (Low Vol.).....	Baltimore.....	1.55	2.40	3.15	3.50@3.75									
High-Volatile, Eastern					South and Southwest					Birmingham				
Pool 54-64 (Gas and St.).....	New York.....	1.55	2.60	3.85	3.50@4.00	Big Seam lump.....	Birmingham.....	2.25	2.35	2.50	2.50@2.75			
Pool 54-64 (Gas and St.).....	Philadelphia.....	1.60	2.90	3.50	4.00@4.45	Big Seam mine run.....	Birmingham.....	1.75	1.85	1.85	2.00@2.25			
Pool 54-64 (Gas and St.).....	Baltimore.....	1.55	2.50	3.50	3.50@4.00	Big Seam (washed).....	Birmingham.....	1.85	2.05	2.05	2.25@2.50			
Pittsburgh 60'd gas.....	Pittsburgh.....	2.85	4.25	4.75	4.25@4.60	S. E. Ky. block.....	Chicago.....	3.35	4.00	4.75	5.00@6.00			
Pittsburgh gas mine run.....	Pittsburgh.....	2.35	3.35	4.25	3.75@4.00	S. E. Ky. mine run.....	Chicago.....	1.95	2.25	3.10	3.00@3.50			
Pittsburgh mine run (St.).....	Pittsburgh.....	2.20	2.65	4.00	3.25@3.75	S. E. Ky. block.....	Louisville.....	3.50	3.75	4.60	5.50@5.75			
Pittsburgh slack (Gas).....	Pittsburgh.....	1.30	2.10	3.10	2.90@3.10	S. E. Ky. mine run.....	Louisville.....	1.60	2.55	3.75	4.00@4.50			
Kanawha lump.....	Columbus.....	2.60	3.75	4.25	5.00@5.50	S. E. Ky. screenings.....	Louisville.....	1.35	1.50	2.50	3.00@3.50			
Kanawha mine run.....	Columbus.....	1.70	3.10	3.75	3.75@4.25	S. E. Ky. block.....	Cincinnati.....	3.35	3.50	4.50	4.50@5.25			
Kanawha screenings.....	Cincinnati.....	1.20	1.80	2.10	2.00@2.25	S. E. Ky. mine run.....	Cincinnati.....	1.75	2.25	3.60	3.50@4.00			
W. Va. lump.....	Cincinnati.....	3.25	3.60	4.50	4.75@5.00	S. E. Ky. screenings.....	Cincinnati.....	1.35	1.75	2.10	3.00@3.50			
W. Va. gas mine run.....	Cincinnati.....	1.80	3.00	4.00	3.75@4.00	Kansas lump.....	Kansas City.....	5.00	4.60	4.60	4.50@4.75			
W. Va. steam mine run.....	Cincinnati.....	1.60	2.95	2.75	3.75@4.00	Kansas mine run.....	Kansas City.....	3.25	3.00	3.00	3.00			
W. Va. screenings.....	Cincinnati.....	1.35	2.25	2.25	3.00@3.50	Kansas screenings.....	Kansas City.....	2.30	2.35	2.35	2.35			
Hooking lump.....	Columbus.....	2.75	3.25	4.00	4.75@5.25									
Hooking mine run.....	Columbus.....	1.65	1.85	3.25	3.00@3.25									
Hooking screenings.....	Columbus.....	1.20	1.55	2.05	2.00@2.50									
Pitts. No. 8 lump.....	Cleveland.....	2.55	3.60	3.75	3.50@4.50									
Pitts. No. 8 mine run.....	Cleveland.....	1.90	2.60	2.95	3.00@3.25									
Pitts. No. 8 screenings.....	Cleveland.....	1.40	2.25	2.60	2.40@2.50									

* Gross tons, f.o.b. vessel, Hampton Roads

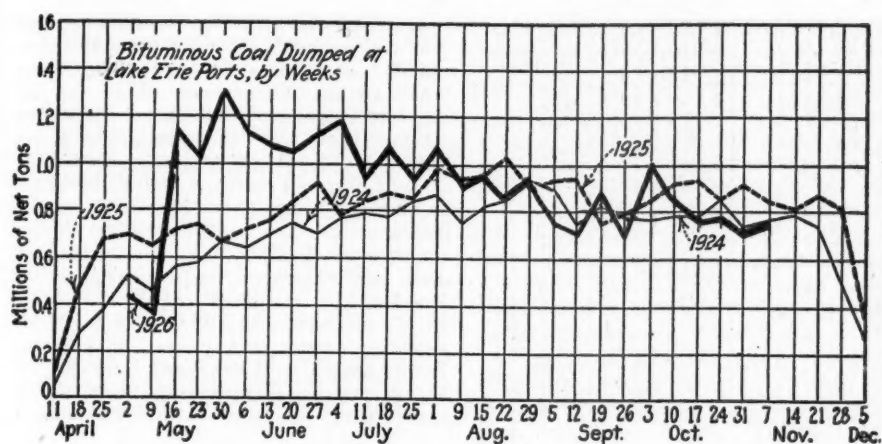
† Advances over previous week shown in heavy type, declines in italics

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

		Nov. 9, 1925		Nov. 1, 1926		Nov. 8, 1926†	
Market	Freight	Independent	Company	Independent	Company	Independent	Company
Broken.....	New York.....	\$2.34	\$8.20@8.95		\$8.50@9.25		\$8.50@9.25
Broken.....	Philadelphia.....	2.39		\$9.25	8.50@9.15		8.50@9.15
Egg.....	New York.....	2.34	8.65@8.90	9.00@9.50	8.75@9.25	9.00@9.50	8.75@9.25
Egg.....	Philadelphia.....	2.39		9.00@9.50	9.00@9.15	9.00@9.50	9.00@9.15
Egg.....	Chicago.....	5.06	\$9.50@10.00	8.14	8.13	8.14	8.13
Stove.....	New York.....	2.34	9.15@9.40	9.75@10.25	9.25@9.50	9.75@10.25	9.25@9.50
Stove.....	Philadelphia.....	2.39		9.75@10.20	9.35@9.50	9.75@10.20	9.35@9.50
Stove.....	Chicago.....	5.06	10.00@11.00	8.48@8.80	8.70	8.33@8.58	8.33@8.58
Chestnut.....	New York.....	2.34		8.65@8.95	9.50@10.00	8.75@9.15	8.75@9.15
Chestnut.....	Philadelphia.....	2.39		9.25@10.00	9.00@9.15	9.25@10.00	9.00@9.15
Chestnut.....	Chicago.....	5.06	10.00@11.00	8.50@8.75	8.39	8.33@8.53	8.33@8.53
Pea.....	New York.....	2.22		5.00@6.25	6.00@6.50	6.00@6.50	6.00@6.50
Pea.....	Philadelphia.....	2.14		6.30@6.75	6.00@6.50	6.30@6.75	6.00@6.50
Pea.....	Chicago.....	4.79	5.50@6.00	6.03	6.10	6.03	6.10
Buckwheat No. 1.....	New York.....	2.22	2.50@2.75	2.35@3.00	2.50@3.50	2.50@2.75	2.50@3.50
Buckwheat No. 1.....	Philadelphia.....	2.14	2.50@3.00	2.25@2.50	2.50@3.00	2.40@2.75	2.50@3.00
Rice.....	New York.....	2.22		2.25	2.00@2.25	1.60@1.75	2.00@2.25
Rice.....	Philadelphia.....	2.14			1.85@2.00	1.75@2.25	1.75@2.25
Barley.....	New York.....	2.22		2.25	1.25@1.50	1.25@1.50	1.50@1.75
Barley.....	Philadelphia.....	2.14			1.65@1.75	1.75	1.50@1.75
Birdsye.....	New York.....	2.22			1.35@1.60	1.35@1.60	2.00

* Net tons, f.o.b. mines. † Advances over previous week shown in heavy type; declines in italics.

‡ Quotations withdrawn because of strike which started Sept. 1, 1925.



Country dealers are buying heavily. Local wagon steam trade has improved and carload business is unusually good. There is a heavy movement to the Missouri River cities and to the Northwest.

Western Kentucky Pushes Ahead

Western Kentucky outstripped the eastern part of the state in the rapidity with which prices advanced the past week and increases of \$1 to \$1.50 were not uncommon. Top quotations, however, still are below prices asked in the eastern field, where \$5.50@5.75 is the ruling range on block, and up to \$6 has been realized. Slack is \$3@3.50; mine-run, \$4@4.50; nut, egg and 2-in. lump, \$5@5.25, in the Louisville market. Western Kentucky block is \$3.50@4.50; lump and egg, \$3.25@3.50; nut, \$2.50@3; mine-run, \$1.75@2; screenings, \$1.50@2.

Car supply is the principal brake upon production. Western Kentucky is shipping about 1,200 cars a day. Some mines in that section are losing two days a week because of car shortage. In the eastern section of the state, running time is four to five days a week, but that does not mean that mines have 100 per cent car supply the days they may be operating.

Rising demand and increasing prices characterize bituminous trade at the Head of the Lakes. Snows over the Northwest led to a flood of orders from retailers and industrial consumers in Minnesota and Dakota. Falling off in receipts of certain grades of coal, notably the low-volatile offerings of West Virginia, has further complicated the situation. Some apprehension is expressed over the declining rate in the movement of cargoes up the lakes.

Prices Up 25 to 50c.

Quotations on prepared sizes of Pocahontas have been marked up to \$9—an increase of 50c. Mine-run is held at \$5.75 and slack at \$4.50. Increases of 25 to 50c. have been made in the list prices on bituminous coals. In some cases docks are turning down orders. For example, one operator at the Head of the Lakes refused to book an order for 10,000 tons of Pocahontas mine-run at 25c. over the list because he would be unable to make replacement at that price.

The steam trade at the Twin Cities is in a comfortable position. Requirements are moderate and there have been no complaints of shortage. Prices are firmly maintained, largely because of strength in other parts of the coun-

try. At Milwaukee current demand is eating into dock reserves and the dock operators find it increasingly difficult to augment the movement from the mining districts. Prices on all grades of bituminous coal have been advanced. Retail quotations have been raised 75c.

The market for domestic grades of Southwestern coal continues firm, with an especially broad demand for the smokeless coals of Arkansas and Oklahoma. There also is a limited movement from Oklahoma to the Gulf for export. Arkansas is sending more coal to the Northwest. Competition between Southwestern and Illinois producers is

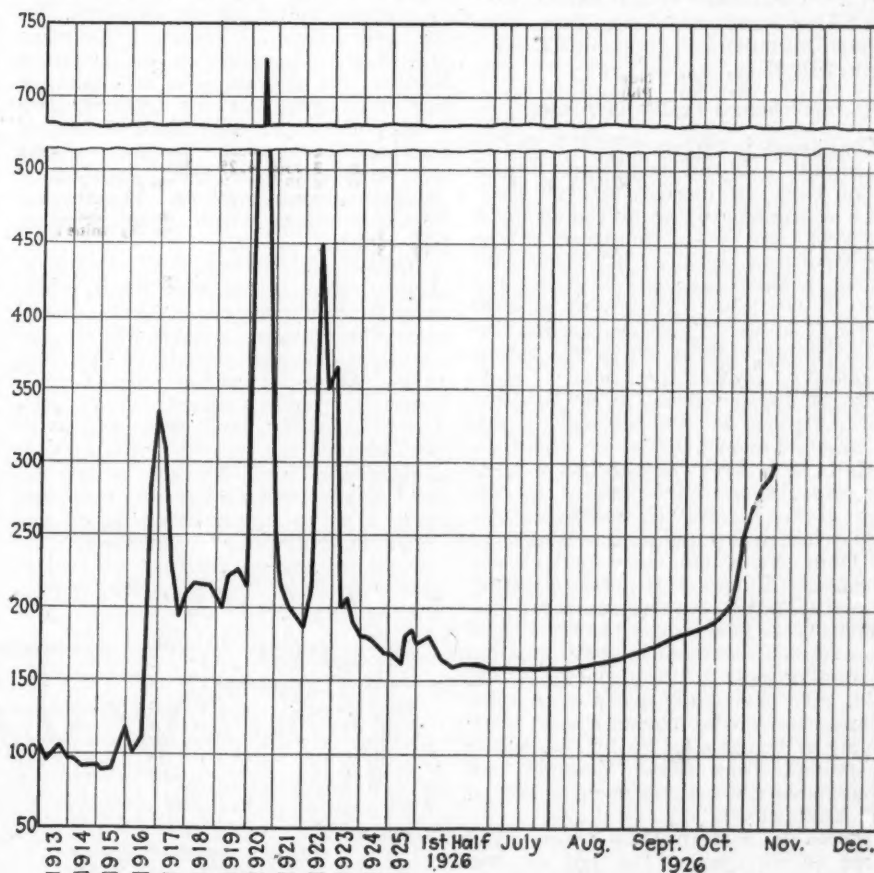
less active because Illinois is enjoying a larger business east of the Mississippi River. Screenings are easier, but no troublesome accumulations of "no bills" are reported.

Little Gain in Colorado

Only a slight weather improvement came to the Colorado market in the closing days of October. November quotations are: Walsenburg - Canon City domestic lump, \$6; washed nut, \$5; washed chestnut, \$3; Trinidad coking lump and nut, \$3.25; fancy chestnut, \$3; Crested Butte anthracite, \$9@9.10; Rock Springs and Kemmerer lump, \$4.25; nut and grate, \$3.75; slack, \$1.50@1.75. The Utah market is colorless.

The tidewater situation is still the controlling factor in the Cincinnati market. During three days last week eastbound movement over the Chesapeake & Ohio was halted by an embargo, forcing coal westward. Shipments via the Norfolk & Western also were restricted. These restrictions and increasing rates of pay in the non-union fields have added to the complications and to the uncertainty of the future of prices.

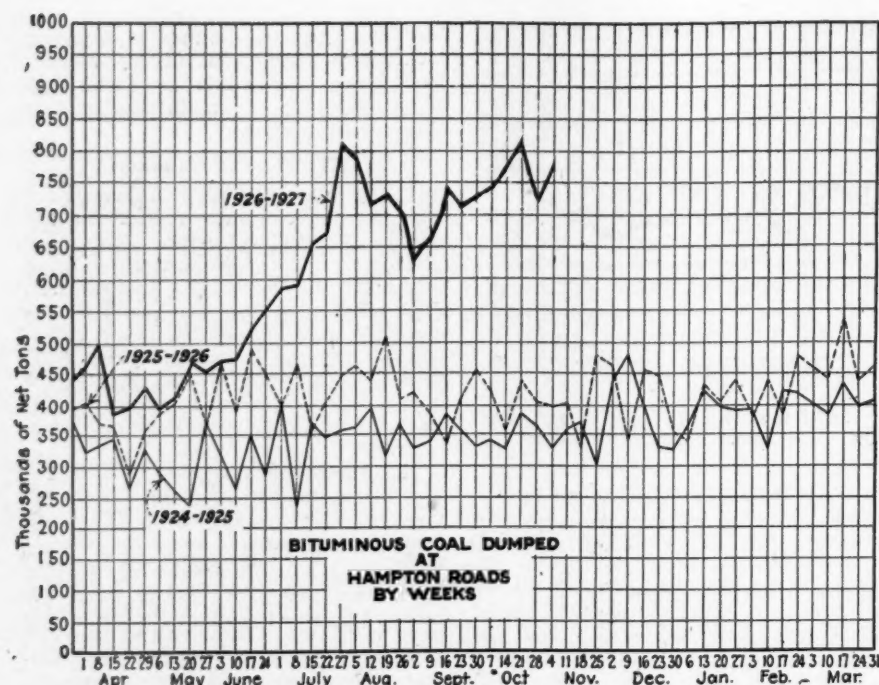
At the present time quotations are a day-to-day proposition. When the C. & O. embargo was put on, less was heard of \$5 high-volatile and more of \$3@3.25 for slack and \$3.75@4 for



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1926				1925	1924
Index	Nov. 8	Nov. 1	Oct. 25	Oct. 18	Nov. 9	Nov. 10
Weighted average price	299	285	249	202	185	170
	\$3.61	\$3.45	\$3.02	\$2.45	\$2.24	\$2.06

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.



mine-run. Producers also are discovering that some of the fancy prices quoted have had the effect of driving business to Illinois and western Kentucky. The latter coal was sold in Cincinnati territory within the past fortnight. Cincinnati retail prices are: Smokeless lump, \$11; mine-run, \$7@ \$7.50; bituminous lump, \$7.75@ \$8; slack, \$5@ \$5.50.

Interchange Traffic Increases

Coal loads interchanged through the Cincinnati gateway last week totaled 13,365 cars, an increase of 192 loads when compared to the preceding week and 503 cars when compared to the corresponding period last year. Included in the total were 2,187 cars en route to the lakes. There was another decrease in empty-car movement, due to a further falling off in the return of open-top cars to the mines. Unless there is greater dispatch in handling and unloading, say the railroads, it will be impossible to avoid a car shortage.

News from Great Britain had a quieting effect upon the Columbus market last week. Bidding by lake shippers, industrials and retailers, however, kept up Ohio prices and even forced some advances. Buyers still press operators in southern Ohio for car numbers. Columbus retail prices have been increased 50 to 75c. Production in southern Ohio is running close to the capacity of the field, with practically every mine open. Transportation is adequate and labor supply is being built up by the return of miners from West Virginia and from industrial centers such as Akron and Youngstown.

Prices in eastern Ohio were somewhat easier toward the end of last week, but the general levels on lump and mine-run showed increases over the preceding week. The weaker tone was attributed to heavier movement of Southern coal to Ohio markets as a result of eastbound embargoes. Output in the No. 8 field during the week ended Oct. 30 approximated 344,000 tons, or 50 per cent of capacity. Retail

dealers and railroads are trying to increase storage reserves.

Pittsburgh Market Softer

There was a softer undertone to the western Pennsylvania market last week. This was reflected in lower prices on spot steam and domestic offerings. In the gas division, however, the decline was slight. Demand on the whole is healthy, but the volume of free tonnage has increased. Export inquiries are being held up pending the outcome of the latest parleys in London. Slight car shortages have been reported on several railroad divisions. The number of union mines which have reopened has grown.

Unlike the western section, central Pennsylvania prices last week registered further increases of 25c. to \$1 per ton. The sharpest advance was on pool 9 coal, which went to \$4@ \$4.50. This range also governed the sale of pools 1 and 71. Pool 10 was \$3.50@ \$4; pool 11, \$3.25@ \$3.50, and pool 18, \$3.25. October loadings totaled 80,404 cars, as compared with 67,149 cars in September. Export demand has broadened and there is more inquiry from inland and domestic tidewater consumers. Increases in wages have been general so that practically the entire field is paying the Jacksonville scale.

Dullness is still the watchword at Buffalo. Pessimists on prices and demand found some encouragement last week in the appearance of blocks of distress tonnage. Offers of coal for future shipment also were made more freely. Actual quotations showed a drop of 25c. in Fairmont and Pittsburgh lump and an increase of 50c. in Youghiogheny gas slack. Low-volatile lump quotations declined 50c. on prepared sizes and mine-run figures dropped to \$3@ \$3.25. Fairmont lump was \$4@ \$4.25; mine-run, \$3@ \$3.75; slack, \$2.50@ \$2.75; Youghiogheny lump, \$5@ \$5.50; slack, \$3@ \$3.50; Pittsburgh and No. 8 steam lump, \$4.25@ \$4.50; slack, \$2.75@ \$3; Allegheny mine-run, \$3.75@ \$4.

New England Demand Active

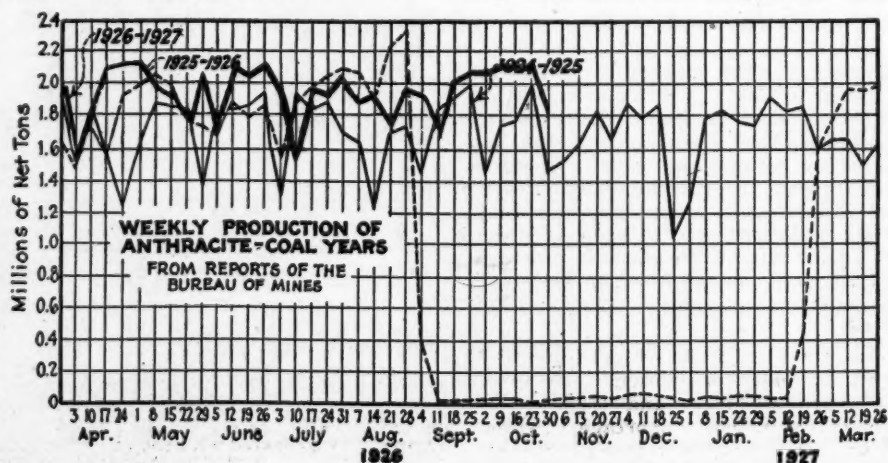
Buying is more and more active in New England territory. Instead of prices being merely nominal, as was the case a month ago, there is now actual competition in bidding for the relatively small quantity of steam coal available for coastwise shipment. Buyers, however, are cautious, waiting for any breaks which will be to their advantage. Nevertheless as high as \$12 has been demanded on bunker Navy Standard at Hampton Roads and \$10.50 has been paid on cargo tonnage. New England is hoping that heavy production meeting tidewater congestion will compel a recession in prices.

On cars at Boston Navy Standard has been held up to \$11 gross although some distributors are endeavoring to take care of their regular trade at \$9.50 and up. Retail prices at Boston have been raised from \$9.50 to \$10.50. New England demand for all-rail central Pennsylvania coals appears to have passed its crest. Prices are easier and they are expected to work still lower in the next few weeks.

A reaction apparently has set in in the New York soft-coal market. Coal was more plentiful last week and reductions, in some cases 25 to 50c. a ton under the ruling figures at the end of the month, were made. These concessions, however, were said to be the exception. The fact that wages in central Pennsylvania and West Virginia have been increased is counted upon to prevent a quick return to the price levels of last spring.

Philadelphia Market Bouyant

The Philadelphia bituminous market continues in a cheerful frame. Mines long closed down have reopened and are



Car Loadings and Supply

	Cars Loaded		Cars	
	All	Coal	All	Coal
	Cars	Cars	Cars	Cars
Week ended Oct. 23, 1926.....	1,209,043	227,518		
Week ended Oct. 16, 1926.....	1,210,163	223,221		
Week ended Oct. 24, 1925.....	1,121,459	189,006		
Week ended Oct. 17, 1925.....	1,106,009	184,331		

	Surplus Cars		Car Shortages	
	All	Coal	All	Coal
	Cars	Cars	Cars	Cars
Oct. 22, 1926....	79,016	13,997		
Oct. 15, 1926....	86,932	16,453		
Oct. 22, 1925....	122,597	48,533		

coaxing away workers from other operations, with the result that companies which accepted low-priced contracts are finding it hard to keep up on deliveries. Railroads which voluntarily increased their contract prices 25c. a fortnight ago made another 25c. advance last week, but even this fails to bring all the fuel wanted. Insistent demand for immediate shipment adds to the confusion and helps to keep up price levels.

With October dumpings smashing all export records for the port, Baltimore is now looking toward a heavy overseas movement this month. In the home market, however, soaring prices have taken the edge off the consumer's desire to increase his purchases. Unlike the export market, where at times little distinction is made between grades, the home buyer continues to exercise a discriminating taste. How long he can do this will be determined by the future course of the export buying.

The embargo restrictions of the Chesapeake & Ohio Ry. at Newport News have forced high-volatile quotations at the piers to new levels. As high as \$12 was paid by vessels waiting to complete cargoes last week while the same coal was offered for delivery this week at \$10. Up to Nov. 1 there was a steady—almost daily—advance in pier prices. Since that time, however, increases have been confined to the high-volatiles.

Alabama Feels the Boom

In the Birmingham district the first week in November brought on a sellers'

market in all the standard offerings of medium and high quality coals. Spot demand was both active and urgent. The volume of inquiries was swelled by a number from territories which ordinarily do not look to Alabama for fuel. Inquiry for bunker and export coal at the Gulf ports has been brisk and it is estimated that at least 150,000 tons have been booked for movement through Mobile, New Orleans and Pensacola this month. Even more could be sold if bottoms were offered.

The small tonnage of free Black Creek is quickly gobbled up and there is little free Cahaba of the better grade. Less desirable grades of steam coal have been increased 25 to 50c. and the higher grades 25 to 75c. per ton in the past few days. In the domestic market, bidding has become so active that in some cases prices have jumped \$1. Big Seam mine-run is quoted at \$2@ \$2.25; washed, \$2.25@ \$2.50; lump, \$2.50@ \$2.75; Carbon Hill mine-run, \$2 @ \$2.25; washed, \$2.25@ \$2.50; lump, \$3@ \$3.25; Cahaba mine-run, \$2.50@ \$2.75; washed, \$2.75@ \$3.50; lump, \$5.25@ \$6.50; Black Creek washed, \$3.50 @ \$3.60; lump, \$5.25@ \$6.50; Montevallo lump, \$5.75@ \$7; Pratt mine-run and washed, \$2.25@ \$2.50.

All carriers serving the district are short of open-top equipment and it is nip and tuck to keep the mines supplied. As a matter of fact, there already have been some losses chargeable to transportation deficiencies and these threaten to increase. Labor is none too plentiful and its ardor to work full time is waning. The coke market is strong. Foundry coke is held at \$6 for both spot and contract deliveries. Egg is up 25c. to \$5.25; stove coke is \$4.75, and nut, \$4.25.

No Break in Anthracite Demand

There was no real change in the New York anthracite market. All domestic sizes find a ready market. In the steam division the improvement in No. 1 buckwheat is the most notable. Top grades of independent coal command the maximum figures quoted elsewhere

in this issue, but the bulk of the independent tonnage is moving at prices about midway between the maximum and minimum quotations shown on page 686.

Philadelphia retail trade has been somewhat quiet, but production has continued at a high rate except when interfered with by religious holidays and election day losses. Stove coal demand is undiminished and buying of nut is active. Egg is draggy. The steam sizes are considerably firmer and there is very little independent tonnage now selling at substantial concessions off the standard circulars. High prices in the bituminous market are responsible for this development.

Colder weather has quickened retail buying of anthracite at Baltimore. Buffalo local demand is seasonal. Lake shipments during the week ended Nov. 4 were 54,300 net tons, of which 24,800 tons were cleared for Duluth and Superior, 14,000 tons for Milwaukee, 9,500 tons for Sheboygan and 6,000 tons for Chicago. Lower temperatures have increased activity at Toronto, but no fears of shortage are entertained. Retail prices are: Anthracite stove, \$18; egg and nut, \$15.50; pea, \$12.50; coke, \$13; bituminous lump, \$8@ \$8.25; Pocahontas, \$13.

Wages Boost Coke Prices

Following the increase in wages at independent ovens the first of the month, prices on Connellsville coke went to \$4.50@ \$5 on domestic, \$5@ \$5.50 on furnace and \$6.50@ \$7 on foundry coke. As a result of the higher coke prices, the Valley furnaces have increased pig-iron prices \$1 per ton. Spot metallurgical demand has been light, but the call for coke for domestic purposes has been encouraging.

Beehive coke output in the Connellsville and Lower Connellsville region during the week ended Oct. 30 was 145,370 tons, according to the Connellsville *Courier*. Furnace-oven production was 68,700 tons, an increase of 1,200 tons over the week preceding. Merchant-oven output was 76,670 tons, an increase of 620 tons.

Coal Produced in Indiana in 1925*

(Exclusive of product of wagon mines)

County	Net Tons			Total Quantity	Value		Number of Employees					Average	
	Loaded at Mines for Shipment	Sold to Local Trade and Used by Employees	Used at Mines for Steam and Heat		Total	Average per Ton	Miners, Loaders and Shot-firers	Haulage and Track	All Others	Surface	Total	Number of Days per Man Worked per Day	Average Tons per Man
Clay.....	908,706	43,034	22,675	974,415	\$1,804,000	\$1.85	339	57	46	328	770	174	7.27
Daviess.....	21,426	15,100	1,721	38,247	72,000	1.88	44	15	13	18	90	103	4.11
Dubois, Spencer and Vanderburg.....	88,083	142,233	7,500	237,816	552,000	2.32	242	45	19	20	326	145	5.03
Fountain and Parke...	62,080	8,165	3,207	73,452	155,000	2.11	106	10	8	9	133	170	3.24
Gibson.....	964,690	30,494	8,582	1,003,766	2,000,000	1.99	671	149	113	109	1,042	188	5.14
Greene.....	1,240,467	24,701	9,376	1,274,544	2,436,000	1.91	920	153	117	223	1,413	119	7.56
Knox.....	2,733,071	59,590	29,124	2,821,785	5,415,000	1.92	1,870	391	209	241	2,711	178	5.84
Owen.....	80,192	156	2,800	83,148	155,000	1.86	3	1	1	76	81	114	8.98
Perry.....		9,213		9,213	26,000	2.82	9	1	1	3	14	184	3.57
Pike.....	2,095,202	12,280	28,851	2,136,333	3,817,000	1.79	646	158	118	667	1,589	150	8.94
Sullivan.....	4,452,489	50,176	70,165	4,572,830	9,399,000	2.06	3,052	754	647	591	5,044	163	5.57
Vermilion.....	2,242,285	38,911	45,141	2,326,337	4,789,000	2.06	2,011	413	218	223	2,865	170	4.79
Vigo.....	4,530,394	87,049	164,163	4,781,606	10,758,000	2.25	4,096	647	446	476	5,665	153	5.53
Warrick.....	834,071	37,215	20,188	891,474	1,506,000	1.69	403	134	75	377	989	121	2.42
Total.....	20,253,156	558,317	413,493	21,224,966	\$42,884,000	\$2.02	14,412	2,928	2,031	3,361	22,732	159	5.89

*The figures relate only to active mines of commercial size that produced coal in 1925. The number of such mines in Indiana was 203 in 1925, 248 in 1924 and 301 in 1923.

Methods of mining in 1925: The tonnage undercut by hand was 391,726; shot off the solid, 4,577,590; cut by machines, 12,925,739; mined by stripping, 3,269,386; not specified, 60,525.

Size classes of commercial mines in 1925: There were 3 mines in Class 1A (500,000 tons and over), producing 12.6 per cent of the tonnage; 33 in Class 1B (200,000 to 500,000 tons), with 50.1 per cent; 34 in Class 2 (100,000 to 200,000 tons), with 23.1 per cent; 21 in Class 3 (50,000 to 100,000 tons), with 7.5 per cent; 50 in Class 4 (10,000 to 50,000 tons), with 5.7 per cent, and 62 in Class 5 (less than 10,000 tons) producing 1 per cent.

Compiled by U. S. Bureau of Mines.

Foreign Market And Export News

Would Utilize Brown Coal In Wetterau District

A number of projects have been submitted recently for utilizing the brown coal and byproducts of the mines of the Wetterau district near Frankfort-on-the-Main. The available brown-coal supply in the district is estimated at approximately 35,000,000 metric tons. The coal is claimed to be of excellent quality and to possess valuable properties, especially a high tar content, and it is exceptionally well adapted to distillation.

The chief project comprises the process of "roasting" the brown coal to extract the tar content, and then utilizing the coke, after grinding to a powder, as fuel for the furnaces of a power plant for generating electricity. It is claimed that the yield of coke resulting from the daily use of 1,000 to 1,500 tons of crude brown coal will provide 90,000,000 to 130,000,000 kw.-hr. annually, sufficient to insure the electricity requirements of Frankfort and Hessen for a great number of years.

The tar extracted will be distilled to obtain motor fuel, various tar oils, paraffin and pitch, all of which it is proposed to sell. It is understood that the gas, which is of good quality and can be produced cheaply, can be used in the same manner as gas obtained from pit coal. Consequently it is stated that not only the electricity but the gas requirements of the district can be easily supplied by the works in future without having recourse, as at present, to pit coal from the Ruhr mines.

French Mines Electrified

Marked progress was made during the past year in the electrification of the collieries of the Compagnie des Mines de Vicogne, Noeux and Drocourt in northern France. At the No. 2 pit a new 430-hp. winch was installed; at the No. 3 pit an 800-hp. winding engine and a 200-hp. fan; at the No. 4 pit an 800-hp. winding engine, a 200-hp. fan and two underground 350-hp. pumps; at the No. 5 pit an 800-hp. winding engine; at the No. 6 pit a 430-hp. winch a 200-hp. fan and two 350-hp. pumps; at the No. 7 pit a 400-hp. compressor and a 350-hp. pump; and at the No. 8 pit an 800-hp. winding engine and a 430-hp. winch. The last-named plant is completely electrified.

British Recovery Slow

London, England, Oct. 27.—The production of coal in Britain is steadily expanding with the gradual return of miners to work in many districts. It should be noted, however, that the published figures of men returning to work are not to be relied upon as they sometimes overstate the numbers.

Roughly speaking the present weekly output is 1,000,000 tons or about one-

fifth of normal. With the ban of exports and bunkering, this means approximately one-third of the pre-strike supplies are available for home use. The deficit in supplies is being made up by importations from the United States and Continental Europe, but tonnage from European countries is becoming increasingly difficult to secure.

British prices are slowly receding. The London householder now pays a trifle over \$20 per ton, with quality an uncertain quantity. Welsh production is increasing and large coal is active at 50s.@54s. at the pits, with through-and-through, 45s.@47s.6d. and smalls, 40s.@42s.6d. Briquets are strong at 52s.6d.@55s. Large Silesian coal is sold at 62s.6d.@65s., c.i.f.; Westphalian unscreened, 55s.@57s.; American mine-run, 57s.6d.

Export Clearances, Week Ended Nov. 4

FROM HAMPTON ROADS

For United Kingdom:	Tons
Br. Str. Goldenway	4,533
Br. Str. Nigariatan	7,902
Br. Str. Sharterhurst	5,261
Br. Str. Kafriastan	7,852
Br. Str. Maplewood	4,429
Ger. Str. Fredericus Rex	6,208
Nor. Str. Ravnanger	4,509
Br. Str. Kingswood	6,306
Nor. Str. Sneestad	7,112
Grk. Str. Agios Ioannis	7,662
Span. Str. Aizkaral Mendo	4,793
Span. Str. Yandiola	3,013
Br. Str. Baxtergate	7,334
Br. Str. Tarantia	6,335
Span. Str. Lolín	5,254
Ital. Str. Nirvo	6,219
Ger. Str. Sabara	6,833
Br. Str. Ovid	4,660
Br. Str. Caldly Light	5,669
For England:	
Du. Str. Peursum, for London	2,897
Br. Str. Oldfield, for London	5,503
Br. Str. Sheaf Mount, for Manchester	8,339
Br. Str. Lynntown, for Newcastle	3,009
For Scotland:	
Br. Str. Bedefel, for Glasgow	4,512
For French West Indies:	
Br. Str. Carron Park, for Fort de France	3,696
For St. Lucia:	
Nor. Str. Solhaug, for Castries	3,661
For Italy:	
Ital. Str. Ansaldo, San Giorgio Secundo, for Genoa	6,580
Ital. Str. Vattellina, for Portovecchio de Piombino	7,713
For France:	
Br. Str. Byntawe, for Le Havre	4,510
For Argentina:	
Br. Str. Sheafpear, for Rosario	3,710
For Brazil:	
Br. Str. Domira, for Rio de Janeiro	5,122
For Trinidad:	
Nor. Str. Fram, for Port of Spain	4,056
For Cuba:	
Nor. Str. Certo, for Cienfuegos	3,188
Dan. Str. Nordamerika, for St. Lucia	2,000
For Uruguay:	
Br. Str. Baron Lovat, for Montevideo	4,737
Nor. Str. Augvald, for Montevideo	4,396
For Egypt:	
Br. Str. Elswick Grange, for Port Said	5,042

FROM BALTIMORE

For England (for Queenstown for orders unless otherwise specified):	Tons
Br. Str. King City	4,364
Dut. Str. Wintersdyke	4,371
Br. Str. Angle Chilean	10,910
Br. Str. Portgarrar, for Barry Roads for orders	6,600
Br. Str. Celtic Prince, for Lands End for orders	9,236
Br. Str. Simonburn	7,765
Br. Str. Rubens	5,767
Br. Str. Sutton Hall	6,226

Gk. Str. Kate	7,213
Swd. Str. Wanjia	3,915
Br. Str. Orangemoor	7,445
Swd. Str. Lulea	7,630
Br. Str. Greibank	7,041
Br. Str. Crumleigh	7,535
Br. Str. Cape York, for Barry for orders	8,643
Br. Str. Baron Fairlie	8,779
Br. Str. Cedrington Court, for Barry Roads for orders	6,744
Br. Str. Fishpool	6,880
Br. Str. Cornwall	12,006
Br. Str. Clearton	6,949
Br. Str. Buckleigh	7,322
Swd. Str. Freja, for Yarmouth	1,722
Jap. Str. Washington Maru	7,195
Br. Str. Breaksea Light	5,336
Span. Str. Aritz Mendi	6,992
Gk. Str. Swansea, Wales for orders to England	6,131
For Italy:	
Ital. Str. Valrossa, for Genoa	6,572
Am. Str. Western Plains, for Genoa	5,992
Ital. Str. Ardea, for Savona	6,612
Ital. Str. Ada O, for Genoa	6,161
Ital. Str. Angelo Toso	7,169
Ital. Str. Valnoce, for Genoa	5,624
For Egypt:	
Br. Str. Chatham, for Alexandria	5,038
Nor. Str. Hoyanger, for Alexandria	8,298
Br. Str. Amersham, for Alexandria	5,233
Br. Str. Petersham, for Alexandria	5,288
For Ireland:	
Du. Str. Waalhaven, for Dublin	5,574
Br. Str. Bellerby, for Belfast	3,826
For France:	
Br. Str. Nubian, for La Pallice	7,645
Ital. Str. Aquitania, for Havre	6,470
For Madeira:	
Nor. Str. Belnor, for Las Palmas	3,832
For Norway:	
Dan. Str. Nordlys, for Berger	5,499

FROM PHILADELPHIA

For United Kingdom:	Tons
Ital. Str. D'Arrigo, Nor. Strs. Jacob Christensen and Vinland, Br. Strs. Linaria, Hillfern, Willowpark, Counsellor and Hurunium	—
For Gibraltar:	
Br. Str. Commercial Pathfinder	—
For Brazil:	
Br. Str. Flimston, for Santos	—
Br. Str. Sabor, for Rio Janeiro	—
For Jamaica:	
Nor. Str. Manchoneal, for Kingston	—
For Argentina:	
Br. Str. Nagara, for Buenos Aires	—
For Cape Verde Islands:	
Fr. Str. Senneville	—
For Denmark:	
Swed. Str. Carlsholm, for Copenhagen	—
For Italy:	
Ital. Str. Vesuvio, for Naples	—
For Newfoundland:	
Nor. Str. Marstenen, for St. Johns	—
For Madeira:	
Br. Str. Gilwen Manor, for Las Palmas	—

Hampton Roads Coal Dumpings*

(In Gross Tons)

	Oct. 28	Nov. 4
N. & W. Piers, Lamberts Pt.:		
Tons dumped for week	228,098	276,952
Virginian Piers, Sewalls Pt.:		
Tons dumped for week	168,861	158,452
C & O Piers, Newport News:		
Tons dumped for week	247,872	264,162

* Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protect.

Pier and Bunker Prices, Gross Tons

PIERS

	Oct. 28	Nov. 4
Pool 1, New York	\$7.50@8.00	\$7.50@8.00
Pool 9, New York	7.15@ 7.50	7.15@ 7.50
Pool 10, New York	7.00@ 7.25	7.00@ 7.25
Pool 11, New York	6.75@ 7.00	6.75@ 7.00
Pool 9, Philadelphia	6.95@ 7.15	7.20@ 7.40
Pool 10, Philadelphia	6.80@ 7.00	7.05@ 7.25
Pool 11, Philadelphia	6.25@ 6.45	6.65@ 6.90
Pool 1, Hamp. Roads	9.50@10.00	9.50@10.00
Pool 2, Hamp. Roads	9.00@ 9.50	9.00@ 9.50
Pool 3, Hamp. Roads	8.50@ 9.00	7.60@ 8.00
Pools 5-6-7, Hamp. Rds	10.00	10.00@12.00

BUNKERS

	Oct. 28	Nov. 4
Pool 1, New York	\$7.75@8.25	\$7.75@8.25
Pool 9, New York	7.40@ 7.75	7.40@ 7.75
Pool 10, New York	7.25@ 7.50	7.25@ 7.50
Pool 11, New York	7.00@ 7.25	7.00@ 7.25
Pool 9, Philadelphia	7.20@ 7.40	7.45@ 7.65
Pool 10, Philadelphia	7.00@ 7.25	7.25@ 7.50
Pool 11, Philadelphia	6.50@ 6.70	6.90@ 7.20
Pool 1, Hamp. Roads	9.50@10.00	9.50@10.50
Pool 2, Hamp. Roads	9.00@ 9.50	9.00@ 9.50
Pools 5-6-7, Hamp. Rds	10.00	10.00@12.00

†Advances over previous week shown in heavy type; declines in italics.

Coming Meetings

Illinois Mining Institute. Annual meeting, Nov. 12 and 13 at Harrisburg, Ill. Edward Coulehan, superintendent, Saline County Coal Corp., Harrisburg, Ill., chairman of committee on arrangements.

Bituminous Coal Conference, Carnegie Institute of Technology, Pittsburgh, Pa., Nov. 15 to 18. Secretary, Prof. Sumner B. Ely, Carnegie Institute of Technology, Pittsburgh, Pa.

Harlan County Coal Operators' Association. Annual meeting Nov. 17 at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

National Industrial Traffic League. Commodore Hotel, New York City, Nov. 17 and 18. Executive secretary, J. W. Beek, Chicago, Ill.

American Welding Society. Fall meeting Nov. 17-19, Buffalo, N. Y. Secretary, M. M. Kelly, 29 W. 39th St., New York City.

Southern Appalachian Coal Operators' Association. Annual meeting, Nov. 19, at Knoxville, Tenn. Secretary, R. E. Howe, Suite 1306, General Building, Knoxville, Tenn.

American Society of Mechanical Engineers. Annual meeting, Engineering Societies Building, 29 W. 39th St., New York City, Dec. 6-9. Secretary, Calvin W. Rice, 29 W. 39th St., New York City.

American Mining Congress. Annual meeting, Washington, D. C., Dec. 7-10, Hotel Mayflower. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

Coal Mining Institute of America. Annual meeting, Chamber of Commerce, Pittsburgh, Pa., Dec. 8, 9 and 10. Secretary, H. D. Mason, Jr., Box 604, Ebensburg, Pa.

Smokeless Coal Operators' Association of West Virginia. Annual meeting Dec. 9, at Washington, D. C. (tentative) Secretary, E. J. McVann, Insurance Bldg., Washington, D. C.

Coal Operators' Association of the Thick Vein Freeport Seam of Pennsylvania. Annual meeting Dec. 14, at Pittsburgh, Pa. Secretary, C. W. Gibbs, Pittsburgh, Pa.

Lehigh Valley Section, American Institute of Electrical Engineers. Annual meeting, Nov. 12, Schuylkill Country Club, Pottsville, Pa.

Industrial Notes

Construction work was started Oct. 1 on a new administration building for the Ohio Brass Co. at Mansfield, Ohio, to cost approximately \$500,000. It is to be a five-story steel and brick structure with stone trim, 255x52 ft., and having reinforced concrete floors. Construction will be fireproof throughout. The general layout and appointments will compare favorably with the finest factory office buildings erected in recent years. Provision is made for a 25 per cent increase in office force over present requirements.

New Equipment

Flow Meter Aids Control Of Power Plant Costs

Operating on the induction-bridge principle an electric flow meter having several new features has been developed by the Brown Instrument Co., Philadelphia, Pa. On this instrument the readings are fundamentally independent of the value of voltage impressed upon the electrical system. The electrical circuit at the manometer, indicator and recorder consists simply of stationary, divided inductance coils. These have only three connections which are permanently made at the time of installation and no make and break contacts are used. All electrical windings and connections in the manometer or meter body are entirely external to the pressure chamber.

The integrator is a mechanical device operated by an electric clock which drives the charts. A pen operated by the action of the integrating mechanism makes a record at the outer edge of the chart each time this mechanism increases the counter reading by one unit. Each tenth mark is distinguishable from the intermediate mark in order to facilitate mountings when it is desirable to determine the total flow for any period of the day. The entire integrator mechanism with the individual recording pen can be mounted in the cabinet recorder, along with the recording mechanism so that a separate integrator case is not necessary.

A series of printed charts is chosen with a fixed ratio between the successive ranges, the manometer being adjustable thereto, making the arrangement convenient when the average load changes from time to time.

Various manometers for use with steam operate on successive maximum-pressure differentials increasing by intervals of about 60 per cent, ranging from 1.6 in. to 16 in. of mercury. There are six ranges in this series, the choice of a suitable manometer depending upon the velocity encountered. Any manometer of this series, however, may be converted into the most sensitive one

by simply opening a valve. This adapts the meter for use with one of the lower range charts, making it easily convertible for low load. Where the apparatus must work on a very low pressure differential, an especially sensitive one is provided. This is capable of giving full deflection of the meter on a pressure difference amounting to $\frac{1}{8}$ in. of water, also the operating force of the meter mechanism in this highly sensitive series is as great as that of the high range.

New Cutting Torch Uses Illuminating Gas

As a result of experiments and research in the utilization of a cheaper fuel that would reduce cutting costs, the Alexander Milburn Co., 1416 W. Baltimore St., Baltimore, Md., has announced a cutting torch designed to use illuminating and byproduct gases.

This torch has a superheater which heats and expands the cutting oxygen as well as the gas fuel, thus raising the temperature of the oxygen to approximately 100 deg. C. prior to

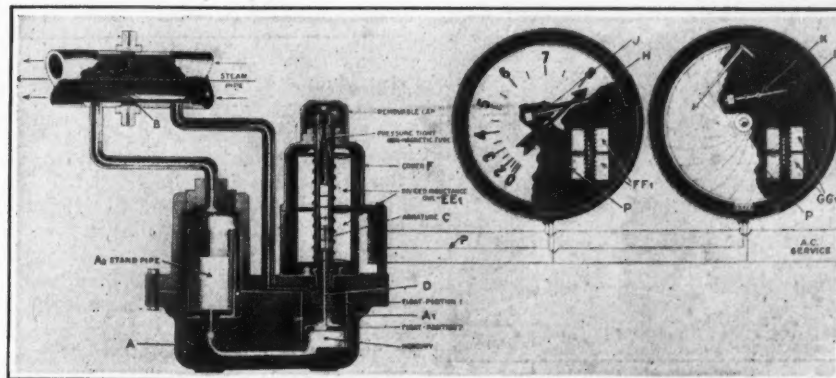


Burns Artificial or Natural Gas

This torch is 21 in. long and is supplied with a complete range of tips for light, medium and heavy cutting.

combustion. The temperature of the gases at the torch tip is thereby increased, as is also the rate of flame propagation in the burning mixture. This reduces the oxygen consumption 25 per cent or more.

Contained within the torch, is a Bunsen burner, which burns illuminating gas and heats the oxygen as it passes through a series of copper coils. It is claimed that heated and expanded oxy-



Gives Check on Steam Consumption

With such a meter power plant efficiency can be determined in pounds of steam produced per ton of coal. This information helps in controlling the distribution and consumption of steam.

gen, in conjunction with illuminating gas, gives better penetration into the metal, a narrow kerf and sharp, clean edges, speedy and smooth cutting with an absence of metallic slag on the underside of the cut. It does not, the manufacturers say, case harden the surfaces cut, but leaves them in practically the same state as the original steel.

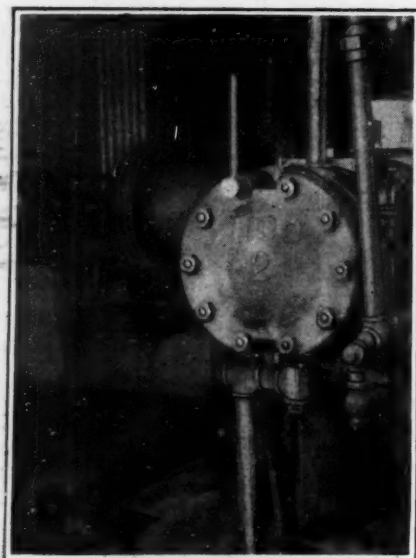
Heavy plates and slabs, risers on steel castings and structural shapes are efficiently and economically cut with this torch. When used with artificial or natural gas, because of the availability and low cost of these fuels, the expense is minimized. This torch also affords a high degree of safety. The high pressure oxygen is controlled by a thumb valve which remains fixed in either open or closed position.

Measures Heat Transmission Through Cylinder Head

A temperature-finding device has been recently designed by the Keystone Lubricating Co., Philadelphia, Pa. This instrument assists in determining the temperature of internal combustion engines as radiated or transmitted through the external surface of the cylinder head.

It is attached to the cylinder head of the engine by the removal of one of the hexagon nuts, being secured to the protruding stud in place of the original nut. It is claimed that there can be no leakage by the substitution of this device in place of the original nut, because of its substantial construction.

This indicator is made in sizes to fit the standard studs used in building the engines now in service. Actually it is an elongated hexagon nut, closed on its outer end. Because of this inclosed side and because of the unusual length of the body, there is formed a cavity or chamber which is intended to be filled with a high-fire-test oil, when the device is affixed to an engine cylinder head. The purpose of this oil is for the absorption of the radiated heat through the



Indicates Engine Temperatures

These indicators are easily installed and show the rapidity of heat transmission in gasoline engines.

stud. It is extremely sensitive to the rise and fall of heat thus radiated.

There is extended from one of the external surfaces of this nut a tube which functions as a thermometer guide and becomes an integral part of the oil chamber. This aids in supporting the thermometer in a vertical position while its bulb is immersed in the oil contained within the chamber below.

Simplicity and Service in Track Braces

It is often a problem to hold a track to the desired gage on short curves over which heavy traffic moves, or where the track is laid through swampy ground, on account of water-soaked ties. To help improve service when these conditions are present, the T. H. Edelblute Co., Pittsburgh, Pa., has developed the Anchor track brace. This is a simple device that can be installed in a track in a few minutes by a man with a wrench. One size of this track brace will fit any rail up to 60



Holds the Rail Like a Vise

The lug on this brace is adjustable and will grip equally well on six sizes of rail. It is claimed that these braces prevent rails from turning over at curves.

lb. in weight. Another brace is made for railroad sidings.

According to the manufacturer, these braces are time savers for moving traffic after a wreck, which has torn up or spread the track, because they are easily installed and few are necessary.



Stiffens the Switch

Braces used on a switch laid in mud and water help to prevent the track from spreading.

New Companies

The Garrett Coal Co., of Zanesville, Ohio, has been incorporated with a capital of \$25,000 to mine and sell coal, deal in coal properties and lands and distribute fuel. The incorporators are George Anousakes, Nicholas G. Granopulos, Frank Holtzman, Irene M. Holtzman and J. Edgar Shier.

The Globe Coal Co., Muskogee, Okla., with a capital of \$25,000, has been incorporated by L. W. Randolph, 705 Surety Building.

The Mate Creek Coal Co., Matewan, W. Va., with a capital of \$50,000, has been incorporated by G. E. Minn, of Matewan, and L. R. Joseph, of Williamson.

Trade Literature

Portable Air Compressor. Sullivan Machinery Co., Chicago, Ill. Bulletin No. 83-E. Pp. 4; 6x9 in.; illustrated. Describes the operation of air compressors by electric motors, available in two sizes, 103 ft. and 206 ft.

Multi-Stage Turbine. Terry Steam Turbine Co., Hartford, Conn. Bulletin S-80. Pp. 30; 8½x11 in.; illustrated. Describes some of the principles involved in the operation and application of these turbines and includes a description of the various types, together with analyses and photographs of typical installations.

Mine Circuit Breaker Switch. Ohio Brass Co., Mansfield, Ohio. Booklet No. 50. Pp. 9; 6x9 in.; illustrated. Preceding the description of how this circuit breaker-switch is made and how it works is a short write-up on "Sectionalizing the Mine," with a sketch suggesting the extent to which this sectionalizing may be economically carried.

Chicago Automation Conveyor Co., Chicago, Ill., has issued a 6-page folder illustrating and describing its new Car Unloader, Pit Car Loader, Heavy-Duty Belt Conveyor, Light Drag Conveyor and Portable Drag Conveyor.

The Climax Engineering Co., Clinton, Iowa, has issued a revised edition of its "Lubrication Instructions for Climax Trustworthy Engines," which treats of the proper lubrication of heavy-duty, medium speed and industrial engines.

Hercules Mfg. Co., Centerville, Iowa, has issued a 4½x11-in. bulletin of 11 pp. illustrating and describing its Steel Car Wheels. Information on its Steel Wire Rope also is included.

The Electric Railway Improvement Co., Cleveland, Ohio, has issued the following bulletins: Circular 15, illustrating and describing a new method of connecting copper arc welding rail bonds to mine and railway rails; the effect of a new type of copper arc weld-rod, which carries a special coating, also is described. Circular 16 is a complete treatise on the various types and methods of arc weld bonding of railway and mine rail; information on a new type of temporary bond for use at mines is included. Circular 17 describes the Erico type SR portable bonding and arc welding outfit.

Centrifugal Air Compressors, Single Stage. General Electric Co., Schenectady, N. Y. Four-page folder describing and illustrating the construction and operating details.

Harry M. Perry, Los Angeles, Calif., has issued a four-page folder illustrating and describing his Short Slack Belt Drive. New pulley horsepower data and information on the advantages and principle of operation of this drive are included.

Simplex Trench Braces. Templeton, Kenly & Co., Chicago, Ill. Four-page folder giving specifications of braces and brace fittings.

Air Filter. American Blower Co., Detroit, Mich. Bulletin No. 2223. Pp. 12; 8½x11 in.; illustrated. The cell construction is described.